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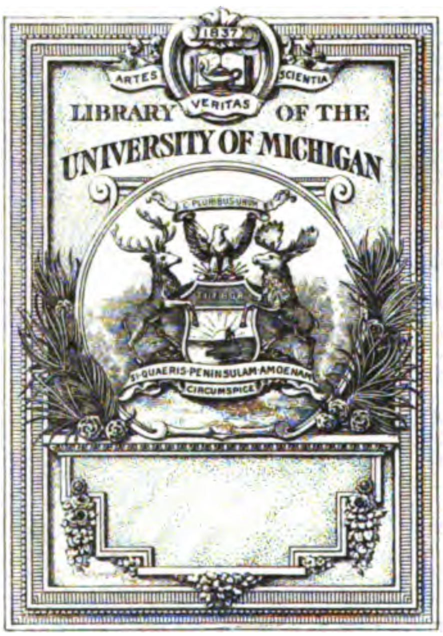
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VOLUME II.

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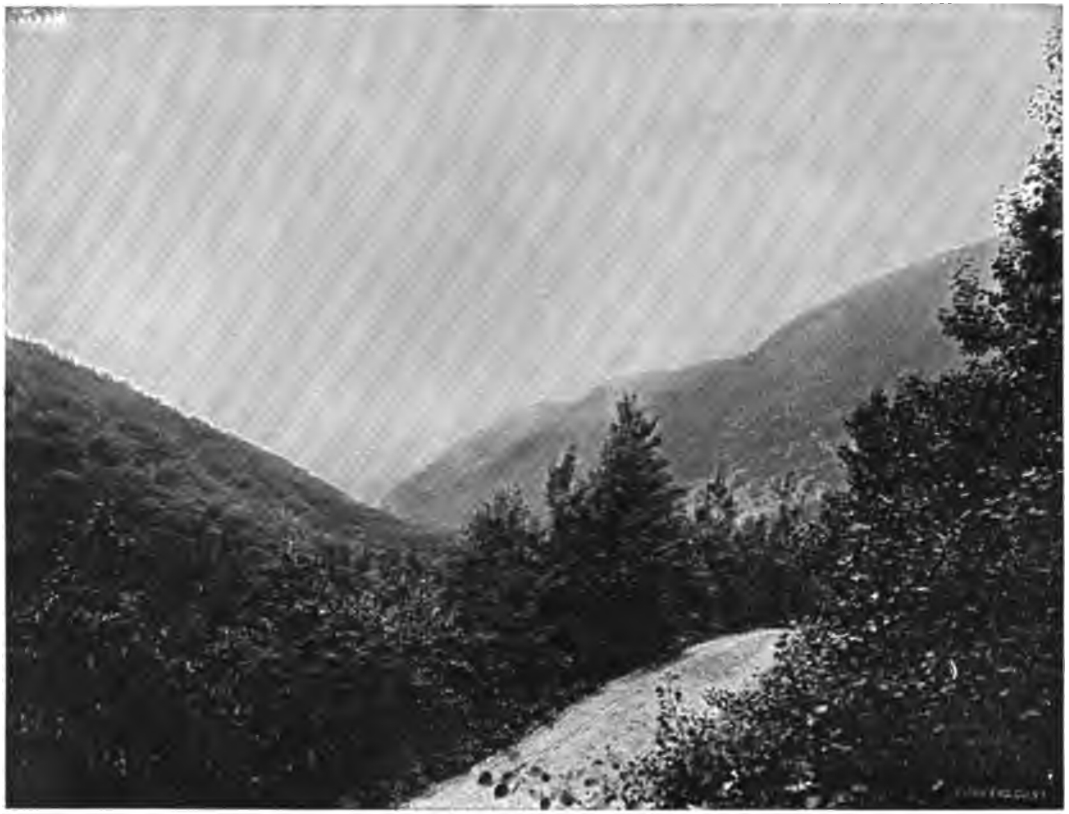

BY E. F. WHITMORE.

"BLACK BROOK NOTCH."

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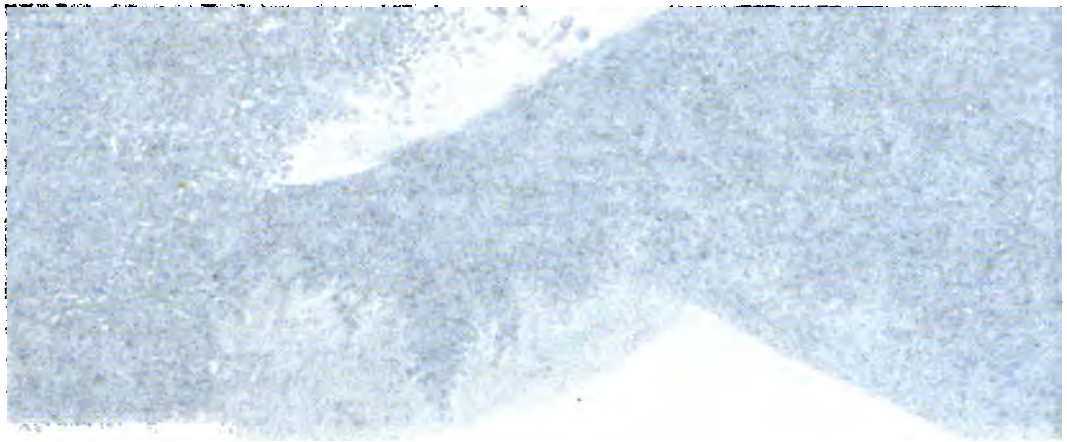

THE AMERICAN
AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., JANUARY, 1890. No. 1.

Our Illustrations.

WE give our readers this month a foretaste of the results of the Prize-Tour Competition. The six Mosstypes are not only excellent specimens of photo-engraving methods, but they are also pictorial records of pleasant days afield with camera and lens, doubly acceptable now when the snow lies deep in field and forest, and one cares not to venture far from the glowing embers of his own fireside. We leave them to tell their own story to our readers.

EDITORIAL.

BACK NUMBERS.—Having received numerous inquiries from new subscribers for back numbers we would regard it as a favor if those of our friends who have duplicates of No. 1 and No. 4 (the July and October numbers), will send us copies. We will pay full price for the same in addition to the cost of postage.

RAPID WORK.—Mr. G. D. Milburn's feat at the Lynn Camera Club, Massachusetts, on the evening of November 21, 1889, of taking a flash-light picture of the audience on an Eastman Rollable Transparent Film, early in the evening, then developing and fixing the negative, then exposing a lantern slide plate, by contact on the wet negative, developing, fixing, and drying the same in time to be put in the lantern for exhibition on the screen, so that the entire audience might see how they appeared under the peculiar light, was a capital idea, and was received with astonishment and surprise, several in the audience uttering jocular epithets as they discovered the likenesses of themselves and their friends.

Mr. Walter G. Chase ably assisted Mr. Milburn in making the experiment. It is an excellent way to demonstrate the value of a flash powder, a quick lens, or a rapid plate. Mr. Milburn successfully repeated the experiment lately at the Society of Amateur Photographers of New York and the Photographic Section of the American Institute in New York.

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Prints on Plain Paper.

WE begin this month the publication of a series of articles on modern printing methods. The series will include all the reliable processes, and will embody the results of our own personal experience. Nothing will be admitted on heresay evidence; all the formulæ have been tested in the printing-room, and may, therefore, be implicitly relied on to give good results. In the July number we published the description of a new "blue-print" process, worked out by Mr. Charles J. Bates, of the New York Camera Club. We have found the formula there given superior to those now in general use, both in the quality of the prints and in the better keeping quality of the paper.

In the present paper we propose to describe a few of the best methods of obtaining prints on any plain or mat surface paper as distinguished from those made on albumen paper.

There is a charm and beauty about these mat prints which must be seen to be appreciated. They are characterized by great delicacy and softness, and with proper printing and toning a wide range of beautiful tones is at the command of the printer.

As compared with prints on albumen or other highly glazed paper, mat prints show a deficiency of detail. Their strong point is the breadth of effect which they give. Hence it will be seen that the negatives best suited to this process are such as show etching-like effects, such, for instance, as those taken in early spring, when the foliage is not more than half-grown. With such negatives, especially if they have been developed rather strongly to make them strong printers, wonderful effects can be produced on mat paper.

Almost any plain paper of good quality is suitable for the process. Plain or salted photographic paper, writing, drawing, and India papers, all these, and many others have been employed in our own experience, which extends over some years.

The beginner will do well to confine his first efforts to the salted Saxe or Rives papers, which are readily obtainable, and which are capable of giving the very best results. To prepare these papers for printing, it is only necessary to float them on the customary silver bath. Our own bath is a perfectly plain one, containing sixty grains of nitrate of silver to the ounce of distilled water. The paper is floated on the bath for two minutes; it is then blotted, dried, and fumed thirty minutes, or until it prints blue. The printing differs little from the method employed on albumen paper. In our own practice, since we affect dark tones and use for this process only strong negatives, the printing is continued until the shadows are well bronzed. Those who prefer light tones, verging on sepia, should not print so deeply. When the printing is completed, the toning is taken in hand. Here many fail by using a toning bath which is too strong in gold. Mat prints require much less toning than albumen prints, and a weak bath is, therefore, indicated. A bath which has been used once or twice will work well here. We can recommend the following formula as well suited for toning plain prints, having used it for some time with satisfactory results. It keeps well, improves with age, and is a good bath for fine work with mat paper:

GOLD STOCK SOLUTION.

Chloride of gold,	15 grains.
Water,	7½ ounces.

Two drams of this solution, neutralized with a pinch of chalk, are added to ten ounces of boiling water, and filtered into a quart bottle in which two drams of acetate of soda have been placed. When the soda is dissolved, the solution is made up to twenty ounces. The bath should be allowed to stand for some hours before it is used. The prints are well washed before toning, and great care must be taken to avoid over-toning. At the same time the prints must be thoroughly toned, as weak tones will dissappoint the worker. A safe rule is to tone to a rich lilac, just verging on blue, for dark tones, and not so deeply for sepia. The after operations of fixing and washing do not differ from the usual procedure. When the printing has been very deep, as it must be for black tones, it is well to add fifteen or twenty grains of salt to the bath, to produce a bleaching action on the whites. We are confident that this method will be found perfectly satisfactory, although the "personal equation" of individual skill enters largely into the character of the finished results.

Another method, quite frequently and with good results, employed in this process is the ammonio-nitrate of silver method. No fuming is necessary in this case, and good tones may be obtained without toning. It is better, however, to tone.

The ammonio-nitrate bath is made by dissolving one-half an ounce of silver nitrate in six ounces of water. One-third of the solution is poured into a beaker, and strong ammonia is added to the remaining two-thirds until the precipitate of silver oxide is re-dissolved. The reserved portion is added, and the solution cleared by adding C. P. nitric acid, drop by drop. The solution is evenly applied to the paper with a swab of cotton. For black tones we have found nothing superior to this method.

If the amateur wishes to step aside from the beaten track, or aims at results differing somewhat from those usually seen in the collections of the average camera-lover he will find that, with a slight preliminary treatment, almost any paper can be pressed into the service. As an example, let us take ordinary drawing paper, which is unsurpassed for large work, which is to be framed. The coarseness of texture of this paper seems to impart a quality to the print which can be had in no other way. In order to make it suitable for our present purpose, it must be salted, and it should be sized. The former operation is performed by impregnating the paper with a soluble chloride which, in connection with the silver of the sensitizing bath will form the sensitive chloride of silver. Sizing is done by floating the paper on a weak gelatine solution. As there is no objection to combining the salting and sizing solutions, we give a formula by which the paper is salted and sized at one operation :

Chloride of ammonium,	60 grains.
Citrate of sodium,	100 grains.
Chloride of sodium,	20 grains.
Gelatine,	10 grains.
Distilled water,	10 ounces.

The solution is filtered, and the paper is floated on it for three minutes. All the subsequent operations are the same as indicated for salting paper. These directions apply to all unsalted papers, and when carefully and intelligently followed lead to very pleasing results.

The main essentials to success with this method are strong negatives and proper toning.

W. H. B.

Rambles Through the Rangeleys.

By E. F. Whitmore.

THE Rangely Lake region has many charms for the sportsman in its abundance of trout and plentiful supply of game, but to the photographically inclined sportsman it has a double interest, for added to its sport with rod and gun it offers many opportunities for the use of the camera.

The amateur photographer could ask for no more fertile field. We start on our trip at Bryant's Pond, sixty miles from Portland, on the Grand Trunk Railway, where we take the stage for a ride of twenty-one miles to Andover, Maine. Up through the valley the stage goes swinging along, the old leather springs creaking beneath its heavy load. After spending the night at Andover we start for the lakes, and a ride of six miles brings us to one of the best places on the route for views. Here is the spot known as "Devil's Den," a deep hole hollowed out of the solid rock by the waters of "Black Brook," and just beyond is the "Old Mill" site, where, in former years, a saw-mill was located. Further on we come to a dark pool in the woods where the water seems to rest after rushing down the ledges.

Leaving this spot we proceed along the lake road and rounding the hill, "Black Brook Notch" bursts upon us in all its glory with the high mountains on either side and the half hidden road winding between. High up on the right may be seen the masses of rock and earth which have slid down from the face of the cliff, giving rise to the story of the Devil bursting his apron-string and scattering the contents through the valley. Just under the cliff, all hands stop for a drink at "Cold Spring" which needs no ice to give it coolness. Soon, reaching the end of our ride, we take the small steamer and speed up and across the two lakes to one of the most noted places on the lakes for fishing, "Upper Dam" It is now late in the afternoon and the remaining hours of the day are spent in getting out the fishing tackle and preparing for the next day's work with the camera.

After a hearty supper at the "Upper Dam House" in the cool of the evening, all gather around the crackling birch fire in the fire-place. Here the fishermen circle around the glowing heat and recount the incidents of the day, and tell of the struggle with the big trout that broke the leader and got away or was captured and rests in the car down by the edge of the river. Or if, perchance, one of the guides or loggers of the region is in the company, you may hear stories of hunting and trapping in the winter time, and how this same room is lit up with a hugh fire while the thermometer outside is twenty degrees below zero and snow four feet deep on a level, and a good laugh is had at the expense of one enthusiastic fisherman, who in his eagerness to land his trout, stood up in the light boat and consequently took a reserved seat in the chilly water of the river, which somewhat cooled his ardor.

FIRE-PLACE, UPPER DAM HOUSE.

The fire-place is shown in the cut, the picture above the mantel showing the original camp and the trophies of the rod. These were painted by artist-fishermen who were as expert in painting trout as in catching them.

Good fishing may be found in many different locations about the dam. Many large trout are taken, fishing from the apron, also just below in the swift water, or above the dam, fishing in the rapid water of the sluice-way.

To vary the scene a trip may be taken on Barker's steamer to "Camp Bemis," situated on the lower arm of the lake above. In fact the entire region abounds in the picturesque.

In returning from the trip, choice may be made of two routes, by way of Phillips or Andover, both being well stocked with the best locations for fine photographs.

If the reader does not think we were well pleased with the trip let him try it next summer and see for himself.

◆

The Record of a Ramble.

BY F. A. MUENCH.

"HELLO! where are you going with that trunk?" This is the manner in which the writer was greeted by a fellow-amateur as he struggled along, burdened with the camera and the thousand and one other accoutrements necessary for securing those prizes that only the true amateur knows the value of, mementoes of the well-spent days amid the scenery of forest and glen that is spread before our friends, forming a never-ending picture-story for their delectation and profit.

We were off for a vacation trip, and bound to make all out of it that could possibly be secured.

It is enough for detail to say that we made Stony Point our first objective point, and here amid scenes sacred to the patriotic heart, where almost every rock and stream bears an intimate relation to our colonial history, and the houses, hills, and woods are interwoven in the story of the Revolutionary struggle, we level our camera upon the landscape that once resounded to the tread of martial hosts, and the air echoed the early cheers of freedom.

Stony Point holds an important part in the story of our national life, and probably no part of the noble Hudson is more rich in history than the territory from Stony Point to Newburgh. We, with the amateur pride, seek to secure the beauty to ourselves, and as we develop the latent images that in the marvelous processes of the art-science is impressed upon the sensitive plate, we thank the discoverer of the dry plate.

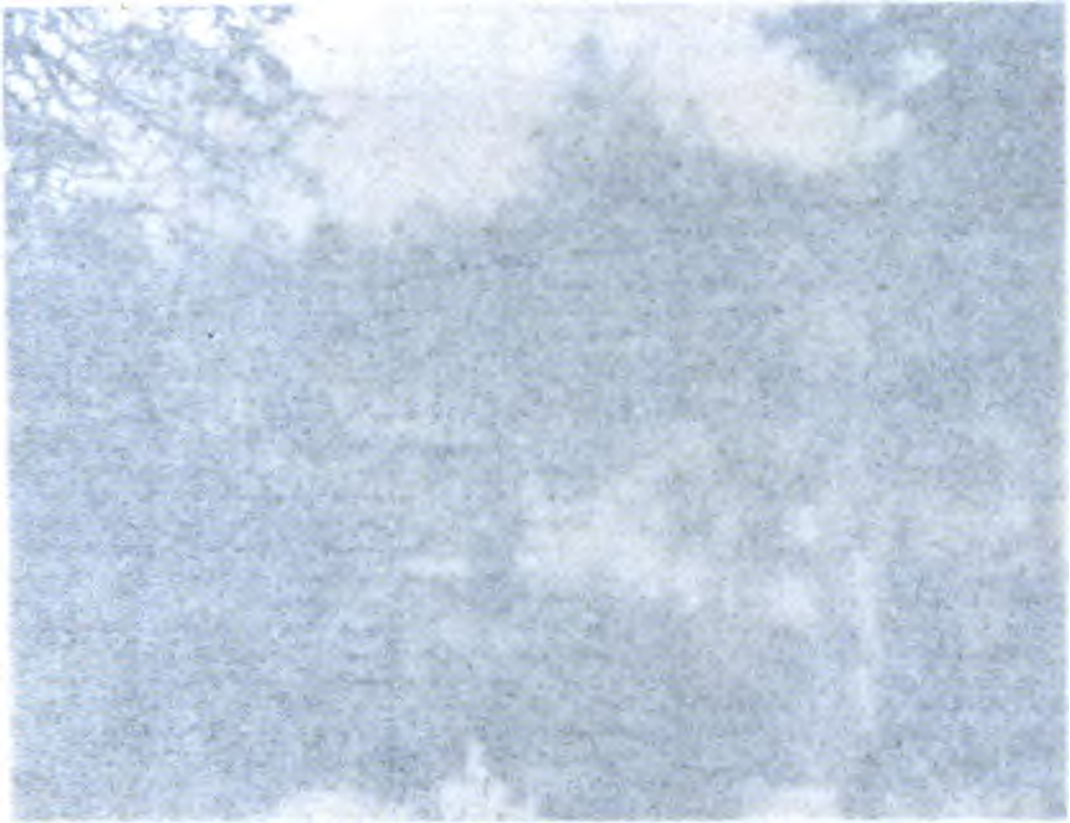
Stony Point has preserved its originality in a marked degree, although two centuries have passed since it was the play-ground of the red men, and a hundred years since it was the scene of sanguinary conflict.

BY F. A. MUENCH.

"A QUIET POOL."

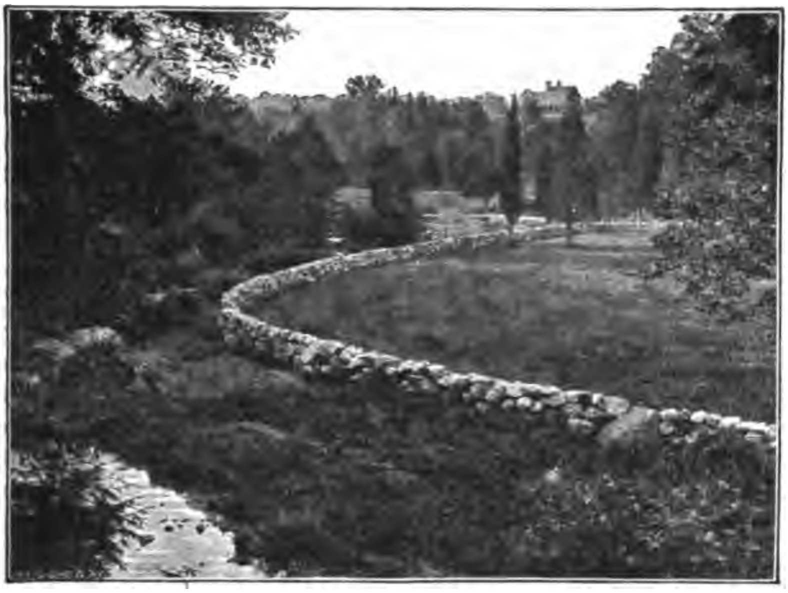
wander out for a motive. We are not

to the north.



But let us take our camera and wander out for a motive. We are not long in finding it, for as the rustic stream we are following bends to the north, it discloses a log bridge spanning it, with the fir and spruce for a background, and the camera pictures it in all its charm and beauty. Again, enchanted by a still, broad portion of this same brook but a few rods further down stream, we capture the scene with the beautiful reflection of the trees upon the banks, and the distant foot-bridge that rises from out a mass of foliage, giving a rustic charm to the scene.

Again we start down stream, but before going many feet a commanding landscape is opened before us, and at the imminent risk of our lives and camera the focus is adjusted with the camera tilted downward, and here we find how useful is a rising and falling lens-board when in a confined situation.



AT STONY POINT.

Away, now, up the Hudson to that Mecca of the American pilgrim, West Point, still upon classic soil, still amid the traditional haunts of the scenes and story of the Revolution, still surrounded by the weird memories that Washington Irving has woven about the noble stream, we enter now the Highlands of the Hudson and once more find pressing upon us from all sides the sublimity and grandeur of nature until we regret that we are powerless to take it all.

We will mention one picture of the many that were secured upon that memorable occasion: The plaza north-west of the parade ground overlooking the Hudson toward Target Rock, with a foreground made up of the trophies to the conquest of Mexico and relics of the war for Independence.

A Vacation Trip Through Canada.

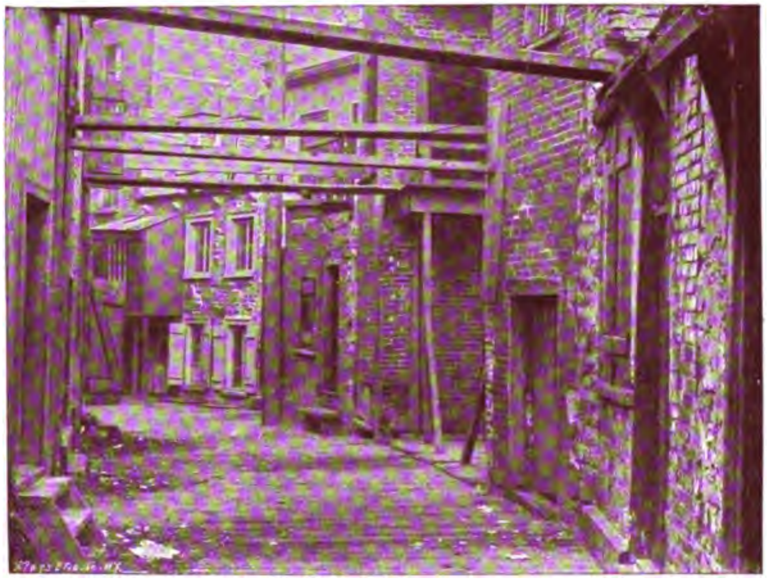
BY A. W. ROBINSON.

WE overhaul our outfit to see if everything is in perfect order for the work before us, and after some little debate decide to spend the summer vacation of 1889 in a jaunt through Canada. Montreal is our first destination. We board the sleeper at New York with high hopes, which are doomed to be considerably lessened in the morning, when the customhouse officer rouses us for a hurried inspection. None too good naturedly I looked about for my case containing my battery of four lenses, but failed to find it. On interviewing the porter and describing the exact appearance of the traps, he remembered seeing a man getting off at Rouse's Point carrying it with him. Can you imagine my feelings on receiving this information ? I felt that all chance for views had gone; however the porter reassured me, saying: "Don't give yourself no oneasiness, sah, I know dat man and he is alright; he took it by mistake, sah. I will see him to-night on the down trip and will have it sent to your hotel. Yes, sah, thank you sah." Two days later my mind was set at rest by receiving everything in perfect order, I immediately started out to make up for lost time.

Just opposite Montreal, in the middle of the St. Lawrence river is the picturesque St. Helen's Isle, on which many choice views can be made. The one I selected for my first exposure was a block-house located on the highest point of the island overlooking the river. It makes a very valuable negative to add to a collection, recalling the olden days of Indian warfare. Victoria bridge, which was for so many years the only connecting link across the St. Lawrence, makes a very interesting view. I waited patiently for over half an hour, hoping to obtain a snap shot of an engine coming out, but had to come away content with the dark frowning opening, as it was drawing near the hour for the Quebec steamer to leave her wharf.

Quebec, the "Gibraltar of America, "is particularly well stocked with choice photographic bits. A whole summer could be spent to advantage in the town and surrounding villages without exhausting the large stock of subjects. We have only time to take a glimpse of this Mecca for amateurs, before we pass further down the St. Lawrence among the French Canadians. Let us take a glimpse into one of the quaint old streets in the lower town, just under the overhanging cliffs, and near the place where the falling rocks so recently crushed many of the houses and their inmates. This old street reminds me very much of some of those old towns along the Rivièra in Italy.

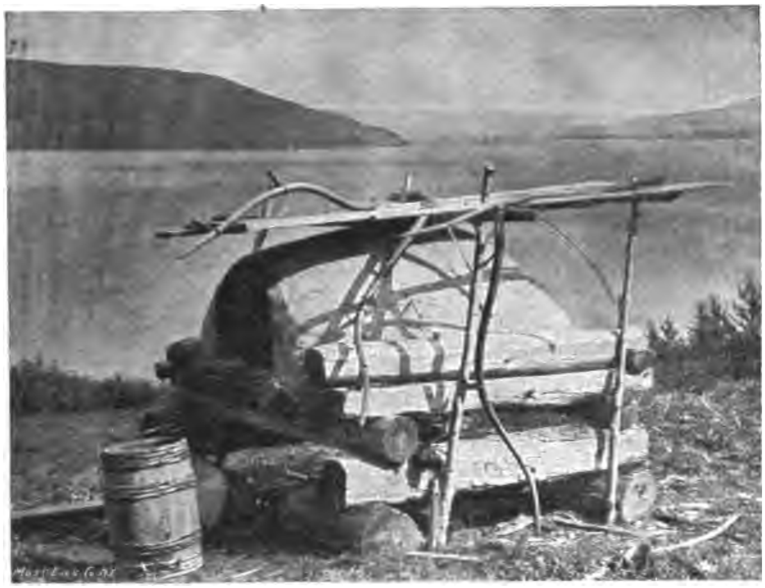
A number of cities are noted for some special design in vehicles and Quebec falls in line with her calèche. Let us climb into one and drive out on the Cap Rouge road where on the bluff overlooking the river are located many fine country seats. Spencerwood, the former home of the Lieutenant-Governor claims our especial attention. The Canadian Government sets aside



BY A. W. ROBINSON. OLD STREET, QUEBEC.

quite a snug sum for its maintenance every year, keeping everything in perfect repair and ready at any moment for his highness to step in and take possession. The porter's lodge, with its little balcony almost hidden away among the overhanging vines and its general air of coziness, is worthy of notice. Many fine negatives can be made in these grounds, but we must hurry on and leave Quebec for a trip further down the river. Boarding the steamer once more, a good opportunity is given to make a number of interesting subjects with your detective camera among the passengers.

As the boat steams along, running close by the bold and rocky north shore, we long many times to have a few minutes in some picturesque cove or hamlet, but we must bide our time until the boat reaches the wharf at Rivière de Loup. Here we will leave the beaten track of travel and journey back among the hills to Lake Temiscowata, an Indian name meaning "winding waters." The village post-office is one of the first points from which you obtain a view of the lake, and it so impressed me that the first favorable morning I was up bright and early and took a view as the smoke was curling slowly out of the chimney. The quietness that seems to surround everything in the early morning, as our old friend Sol gradually climbs above the horizon and awakens nature, touching everything with a bright hue that had only a few minutes before been shrouded in the gray cloak of dawn, to my mind is the best time for photographing.



BAKE OVEN.

A peculiarity of this district is the bake oven. Let us take a look at one situated near the lake. The day this negative was made the wind was blowing a perfect hurricane. I set the camera in a sheltered corner behind a house and thought the oven would blow over into the lake before the exposure was made, but it held its ground and allowed me to get a clean, sharp negative.

The natives of this region make a very interesting study as they have so many peculiarities. They speak the French language and the greater number hardly know what money is. Everything is made by the sweat of their brow. If something is wanted from the village store it is paid for in trade, exchanging shingles, potatoes, or some home-made article for the necessaries of life. One dollar a month is paid the house servant as wages, while the small log huts in Temiscowata village rent for twelve dollars a year, the landlord receiving labor for pay. They make almost all the furniture by hand, but they are a happy set of people and seem to enjoy riding about in old ox carts hewn from the trees that shade their humble homes.

For a lover of sport the country and water round about will furnish plenty of game. On the shores of Toledi Lake, only about eight miles from Temiscowata, we came across an Indian trapper's hut which bore good evidence, from the number of bones scattered about, of the amount of work done there the previous winter.

Before we turned our faces homeward we took a run up the Saguenay. The weather was not very favorable for work, being cloudy, with considerable fog. About the only negative we were able to make was at Chicoutimi, where the steamer remained for an hour. Fastened alongside of a schooner was an old-fashioned side-wheel ferry-boat worked by horse-power which made a striking contrast with the steamer laying at the end of the wharf, waiting to carry us towards our native heath.

From the Saguenay we hastened home, having a good stock of plates to employ our spare time, and live over again the scenes and incidents through which we had passed, as the detail gradually comes out in the developer.

Photography from a Woman's Standpoint.

BY MISS CATHERINE WEED BARNES.

[Read before the Society of Amateur Photographers of New York, December 10, 1889.]

I HAVE been asked to say something to-night on photography viewed from a woman's standpoint. Having trained myself to look at it simply as a worker, you must pardon me if I, occasionally, in the interest of the subject, step off my special platform. I can only excuse myself for saying anything by the fact of my absorbing interest in the work, combining, as it does, the exactness of scientific truth with the keen pleasure of artistic effort.

Less than four years ago I set up my first camera after much study and many conjectures as to where the image would appear. If discouragement was possible it would have come that first year, for even my inexperienced eyes could see that the work was poor. Then acquaintance with a professional friend who knew how to criticise sharply began to have its due effect and, by his advice, I joined this society nearly two years ago, as the camera club in our benighted city of Albany does not admit ladies. It was a fortunate step for me, as words cannot express my gratitude towards this society for the numerous benefits received from it, and I only wish it were possible oftener to attend its meetings. In this connection let me thank you for granting my application to become an active member.

In the course of what my friends are pleased to call a "*craze*" I have found that eye and mind have gained,—the one, new power of observation; the other, a broader delight and appreciation of the world about us. Every step in city or country now presents a picture that once would have been overlooked, and every long journey is fuller than ever before of pleasure and benefit.

While previous work in art schools and painters' studios has not been wasted, it has yielded place to the mysteries of the dark-room and the subject is viewed through the sharp eye of a long or short focus lens as may be required, for side by side with the love of art was a latent love of science. It might be called a case of transferred affection, for my hydrometer and graduates seem as beautiful now as once did a new set of brushes and palette, while my myriad collection of bottles, scales, etc., rival the finest colors from Schoenfeld, or Winsor & Newton.

No knowledge, we are told, is ever really lost, but it sometimes performs a kind of transmigration into some other branch of learning; the training gained in various reading and dramatic clubs has many times aided me in posing a sitter, as well as preparing to take an interior.

Speaking from a woman's standpoint, I must confess that landscape work is not ordinarily pleasant, especially in cities, where the ubiquitous small boy predominates, and seems to rise from the earth at sight of a camera. This and other annoyances do not apply to interiors which, though difficult work, are exceedingly satisfactory when well done, and which make peculiarly suitable work for ladies who possess the requisite taste and patience. I must say very few people, except practical photographers, really appreciate the best points of a fine interior and do not realize that the picture, to take which, one has had to purchase an expensive lens, and spend the greater part of a morning or afternoon in focusing, exposing and developing, to say nothing of the subsequent printing, etc., is worth any more than the chance shot of the most ordinary snap camera. Interiors have been shown me with vertical and horizontal lines on what might be called the bias, furniture deprived of all visible means of support, more or less halation, and, if figures were introduced, placed so the light directly faced them. It seems to me that this branch of photography has by no means received proper attention, and that it is exceedingly valuable in its results.

More difficult still and therefore more interesting is portraiture, from the simplest outdoor view to the most carefully posed sitter under the skylight. Human Nature takes on very odd phases, and one needs the eyes of Argus and the patience of Job to see that the work is well done. But there is excitement and thorough satisfaction in a well-taken portrait, especially if the subject admits of being dressed and posed to illustrate some historical, mythological, or other fancy of the artist when, if sitter and artist are "*en rapport*," a world of beautiful ideas may be evolved.

Mr. Seavey painted two of my backgrounds in soft shades but left the third for me to draw my own designs to be removed when desired for others. There is a rod with rings in front of and high above the backgrounds on which to hang curtains, while rugs, furniture and the conservatory are laid under contribution when needed. No trouble is too great when it is repaid by a good picture.

Three out of my nine lenses belong in the studio, one is a 3 B Dallmeyer for large heads and the two others are Voigtländer Euryscopes, one of which is the new W. A. Portrait and Group lens. This last has proved absolutely necessary, as my studio is only 9 x 19 feet, and with it I can take a full-length panel figure at less than eight feet distance. My other lenses are three Dallmeyer's, one Ross, one Optimus, and one Morrison. All my developers are made in the dark-room near at hand by hydrometer and scales, and I have just built an emulsion closet for coating lantern slides.

Having a good lantern I generally try my slides before submitting them to your keen scrutiny. My first test-night experience here was very instructive. I had requested that my name be not mentioned, so that the full benefit of your unbiased judgment might be given, as it was, very fully, to my edification and profit.

I am a thorough believer in lantern slide exhibitions and enjoy making slides as it is much easier than developing negatives.

Here let me testify to my intense respect for eikonogen; no other developer shall henceforth touch my slides. I believe thoroughly in its future capabilities, but have only tried it on slides and bromides. I use a single solution and I find it requires careful management from the first to the last step of the process, as its rapidity of working seems marvelous.

My only lesson in slide-making was watching Mr. T. C. Roche expose and develop one, and I was then told to go ahead, which I have tried to do ever since. I have seen very little of other ladies' photographic work, but have sought for information wherever it could be found, especially here where the feeling of comradeship is strong enough to lead many of you to take infinite pains with beginners like myself. Such treatment contrasts forcibly with that of a recent writer in the *Photographic News*, signing himself "Perplexed," who gives a number of objections to lady photographers enjoying club privileges. Those of you who see the AMERICAN AMATEUR PHOTOGRAPHER may find some comments on the above-mentioned writer's statements in the December number.

One point more and I have finished. There is a suggestion I would like to make to our representatives on the Joint Exhibition Committee. It may possibly be favored by no other lady competitor, perhaps not by the committee, but I wish to urge it strongly. It is to abolish the so-called "Ladies' Diploma or Prize." My reasons can be briefly stated. It is not a complimentary distinction, although intended as such, and is considered by outsiders as implying that the lady who wins it competes only against other ladies, which greatly lessens the value of the prize. If I had known before receiving it, at Boston, that at the same time a prize for a special subject was to be given to another lady, I should have hesitated about accepting the diploma.

Good work is good work whether it be by man or woman, and poor is poor by the same rule. If the work of men and women is admitted to the same exhibition it should be on equal terms. Don't admit a woman's pictures because they are made by a woman but because they are made well. If the work is poor reject it. Do not when she wins a prize allow the inference to be drawn that it is hers only by courtesy, but let her feel that she has won it fairly in a free field. You admit her to your deliberations, place her work on your walls and on your lantern screen. Can you not offer your prizes simply for certain kinds of work and allow the question of sex to be laid aside?

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The "Eiko" Developer.

Eikonogen continues to be very favorably regarded by all amateurs who have tried it. Its many advantages become more and more apparent as its use increases, though in some quarters we have heard of difficulty in obtaining density and a liability of the plate to be covered with a blue fog. Our brief experience leads us to believe that the want of density is due either to too small a quantity of eiko in the developer or to removing the plate too soon, not giving the developer sufficient time to permeate the film. The early removal is likely to be made on account of the sudden appearance of the image after the developer is applied, and because of the fear that in the dim light of the dark-room the shadows look as if they might fog all over. We have purposely allowed a plate apparently to all blacken over on the surface, keeping it in the developer long enough to acquire what we supposed would give it the proper density, thinking thereby it might be hopelessly fogged. On fixing, we had a surprisingly good negative, which, though blue in color, made a fair print. It is to the advantage of the developer that it brings out the details in the shadows with a rapidity and power that is not found in any other, hence, with it we must not expect clear glass in the shadows, but instead, a velvety, soft detail or substance, which will add to the completeness of the negative. In under-timed plates it is advisable to start the development with a small quantity of alkali added to the eiko solution, and then to bring out further details add a much larger quantity after the image is half out. If the development is very slow the high lights will grow quite dense. For fully-timed and over-timed plates we find a preliminary soaking in a weak solution of bromide of potassium (bromide three grains, water 10 ounces) of great advantage. After two minutes' soaking, without washing, the plate is removed to the developing tray and eiko having very little alkali added is poured out. The development thus is perfectly under control, proceeding just fast enough to be comfortable, and enables one to tell to a nicety whether or not to add more alkali to push it. We do not advise a one-solution developer in which the alkali is already mixed with the eiko, as one is limited and does not have the control that is desirable. For example, should the plate be under-timed, the developer, as prepared, will only develop so far, and we have been told by persons using such a developer that for instantaneous pictures it would work well up to a certain point and then, though the plate was left in the solution for some time, nothing further would appear. If several grains of alkali, either carbonate of soda or carbonate of potash, had been added probably much more could have been brought out. In over or fully-timed plates the advice is to dilute the developer three or four times with water. This may weaken the alkali in the developer sufficiently to slow the development to suit the exposure, but it also greatly dilutes the density giving power of the eiko. The better plan is to keep the strength of the eiko up and add merely a trace of alkali to begin with. Hence the great adaptability and utility of the two-solution system to whatever exposure is presented to us, and the more certainty thereby of obtaining satisfactory negatives.

A formula by Mr. A. A. Adee, which we find in the *Photographic Times* is probably well suited for instantaneous exposures, though we have not as yet tested it. He says: "In practice, four grains of eikonogen to the fluid-ounce of mixed developer appear to be sufficient to produce a well modulated negative for ordinary time exposures, and, in fact, for all uses, except very short exposures with a rapid shutter and a small stop, when six or seven grains to the ounce may be profitably employed. Two stock solutions are prepared:

A.

Sodium sulphite (crystals), c. p., ...	45 grains.
Hot distilled water, ...	1 ounce.
Eikonogen, ...	15 grains.

Dissolve the sodium sulphite completely before adding the eikonogen to the still hot solution.

B.

Sodium carbonate, dry, c. p., ...	480 grains.
Potassium carbonate, granular, c. p., ...	960 grains.
Sodium sulphite (crystals), c. p., ...	720 grains.
Caustic soda (sodium hydrate), ...	50 grains.
Hot distilled water (made up to), ...	8 ounces.

The alkaline solution should be filtered when cold. It is quite surprising how little of this alkaline solution is requisite to bring up a good picture. In use take

Solution A, ...	¾ ounce.
Water, ...	1½ ounces.
Solution B, ...	15 drops.

If the picture comes up too slow and with undesirable density, ten or fifteen drops more of solution B may be added. A few drops of a (50 grains to the ounce of water) solution of bromide of potassium may generally be added with advantage to restrain and to give density."

The above formula no doubt will develop several plates in succession, though Mr. Adee says nothing about it.

The comparative rapidity of the pyro, hydroquinone, and eiko developers was recently tested by a very experienced slide maker on one make of lantern slide plates as follows: From one 4 x 5 negative three plates were separately exposed by contact exactly five seconds, twenty inches distant from a fish-tail gas burner. One plate was put in a pyro developer, the time occupied in bringing out the picture being three minutes. Hydroquinone took three minutes and thirty seconds; eiko, one minute, fifteen seconds.

Flash Light Photography.

BY A. PEEBLES SMITH.

[Read before the Society of Amateur Photographers, December 10, 1889.]

In January, 1886, a group photographed on a collodion plate by light emanating from magnesium ribbon was published in the *Philadelphia Photographer*. Gadicke and Miethe were the first to apply it in the producing of instantaneous portraits of living people. Dr. Piffard was the first to bring it into prominence in this country ; in fact, he is the inventor of a magnesium flash-lamp—I am the happy possessor of one of these lamps,—and if sufficient pressure is not given to the bulb in order that the air may puff hard on the alcohol flame, very little light is obtained. Just hold on to the lamp and puff hard and you are all right. But the invention of flash-lamps has been a waste of time. George Rockwood, in an address before the Minneapolis convention, expatiated on a certain magnesium lamp, immediately after explaining how some exceedingly large subjects were taken, admitted using pure magnesium and gun cotton—not from one source, but from several. He also made this statement : "There is one thing, please understand, that everything that is added to the magnesium is to its detriment, both as regards its actinic power and its healthfulness."

My principal aim this evening is to show how perfect results may be obtained from the largest of subjects, the light coming from one source only and emanating from a magnesium compound—a correct flash—non-poisonous, non-explosive—in fact, it is made by pounding it in a mortar. I have not eaten any as yet, not caring for as light a diet as Mr. Newcomb, formerly of the Scovill Co. An explosion of flash powder which killed three men, occurred at Philadelphia, November 11th, its component parts being :

Picric acid,
Magnesium,
Bichromate Potash,
Permangnate potash,
Nitrate potash,
Chlorate potash.

It exploded upon being poured through a seive, and all this in a chemical laboratory, where they should have known better than to mix such ingredients. It is my purpose to demonstrate the importance of the flash practically applied to the producing of perfect photographs where no daylight can be used and not as a substitute for daylight, contending that no one has the right, in these enlightened days, to state that certain things are impossible and stick to iron-clad rules. The almost universally accepted theory regarding flash photographing is that results are exceedingly poor compared with daylight work. Such a competent authority as Napoleon Sarony says: " That it cannot be successfully used in the production of portraits, because the photographist has no opportunity to pose his subject and study the effect of light and shades in the camera.

I beg to differ with Mr. Sarony. We now see on the screen a diagram representing a flash-light atelier. In daylight operating the illuminant comes from one source only—the sun. In magnesium portrait work the flash and focusing light should emanate from one point also—a lamp—the rays from this are easily controlled by the set of curtains seen on the screen, and, by this arrangement any effect of light and shade may be indulged in, and further is visible to the eye on the ground glass of the camera. Substituting the magnesium flash for the lamp and your light and shade effect has been transferred to the sensitive plate, and by magnesium, too, contrary to Mr. Sarony.

[At the conclusion several lantern slides were thrown on the screen, of fires burning out of doors at night, interiors of theatres and of parlors, with the occupants playing games, which were very good. A collodion bromide slide developed with eiko was shown, which was rich and warm in color.]

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B

Entertainment by the Hoboken Camera Club.

The giving of a public entertainment by so young a club (organized March 22, 1889,) on such a large scale as that undertaken on the evening of December 5, 1889, in the spacious Odd Fellows Hall in Hoboken, to which we had been invited, is, we think, something remarkable, displaying an amount of interest and activity among its twenty-six members that it will be well for some of the older clubs to pattern after. The affair was a brilliant success in every way, the hall being nearly crowded with an audience numbering over six hundred. In an adjoining room some two hundred photographs, exclusively the work of the members, were hung on two inverted V-shaped screens, located under a gas-light. The work was very good, as a whole, showing in some cases great care, excellent technical ability, combined with artistic qualities that give promise of good results in the future.

The entertainment consisted of instrumental music, volunteered by an amateur orchestra called the Valencia Orchestra, a piano solo, "The Camera Waltz," composed by Emil Adolphi, a brother of one of the members of the club, singing by Madame Göttich, and an exhibition of lantern slides, of views in Paris and the Paris Exposition. The lantern was operated by A. D. Fisk of New York. Owing to the position of the chandeliers, the screen had to be located on a side wall at right angles to the way the audience was sitting, but this slight inconvenience did not interfere with the interest in the views. Those of the Exposition were quite interesting, though several slides were not up in quality to what they should have been. Mr. Eugene Weil explained the views. In the second part, after the orchestra serenade, Mr. F. C. Beach was escorted to the platform by one of the members, and on being introduced, spoke a few words about the certain success of the club, of its bright future, and of the plan carried out in determining who should receive the diplomas. He then presented to each recipient a diploma as his name was called. They were Mr. William Sachs, Mr. William Allen, Mr. George E. Mott, Mr. Charles Beckers, Mr. F. A. Muench, and further announced that it was to the credit of the club that one of its members, Mr. F. A. Muench, had been awarded the second prize in the "Prize-Tour Competition" of the AMERICAN AMATEUR PHOTOGRAPHER, a Gundlach lens.

The address by President Mott, early in the evening, was very creditable, and we take pleasure in reproducing it on another page [see page 17] under the title of "The Advantages of Photography to the Amateur."

After the exhibition of lantern slides an elaborate supper was partaken down stairs by those who remained, followed by dancing in the hall for some time into the early hours of the next day.

A programme, entitled "The Camera," was distributed, having an account of the club, its aims and what it had done. It has had two outings, one in the spring and the other in the fall, the latter being to Coneshaugh, Pike County, Penn., a very picturesque place. The proceeds from this entertainment are to be used in improving the rooms and the purchasing of an optical lantern. We give below the programme:

PART I.

1.	Overture—Iphigenia.—*Gluck*.	Members of Valencia Orchestra.
2.	Address by the President.	George E. Mott.
3.	Piano Solo.	Emil Adolphi.
	(Camera Waltz—Dedicated to H. C. C.)	
4.	Soprano Solo—Das Zauberlied Erick.—Meyer Helmund.	Madame Göttich.
	(By Special Permission from Metropolitan Opera House, New York.)	
5.	Stereopticon Views of Paris.	Remarks by Eugene Weil.

PART II.

1.	Serenade—*Tittl*.	Members of Valencia Orchestra.
2.	Awarding of Diplomas.	
3.	Solo—Mein Sohn, segen dir. Arie aus Prophet.—Meyerbeer.	Madame Göttich.
4.	Stereopticon Views of Paris Exposition.	Eugene Weil.

The present officers of the club are: Geo. E. Mott, President; A. J. Thomas, Vice-President; Richard Beyer, Secretary; C. L. A. Bickers, Treasurer; George Steljes, Custodian.

The Advantages of Photography to the Amateur.

BY GEORGE E. MOTT.

[Address of President Mott at an Entertainment Given by the Hoboken Camera Club, Odd Fellows Hall, Hoboken, N. J., Dec. 5, 1889.]

Ladies and Gentlemen: In these days of social unity the Hoboken Camera Club has no apology to offer, no extenuation to plead for its existence. You who have turned aside from the onward hurry and unceasing push of life to consider for a time the various phases of human character have doubtless discovered that all ages and countries have contributed to history the fact that men, in all conditions of society, have banded themselves together to advance a common purpose, and ideas that have found a lodgment in kindred hearts and minds have, through gregarious instinct, forced their possessors to seek out from amid the surrounding world those actuated by similar motives for the purpose of fraternization. Upon this truism we base our right to be.

The potentiality of the modern dry plate and the ancient camera, when in combination, has been only too manifest in the present age, for in less than twenty years we have witnessed the art science of photography undergoing a radical revolution, deprived of its chemical complexity, robbed of its exclusiveness and counting its devotees by thousands in all the walks of life and in every land beneath the sun. Such figures as are obtainable through the statistical records of the societies which dot the world like stars in the azure, do not embrace the entire number of men, women, and children who have endeavored to follow where Daguerre and Fox-Talbot led the way but fifty years ago, and even though they have not *all* been successful as photographers they have found consolation in defeat from the admiration of silver stains on their fingers and pyro on their best clothes, and they have gloried in the euphony of hypo-sulphite of soda, meta-bi-sulphite of potassium, hydroquinone, eikonogen, and a hundred chemical monstrosities that are synonyms with the darkroom and its mysterious manipulations.

While it is true that the early history and primitive secrecy of the photographic processes has given way to the keen search of the investigator, and the ponderous formulas have been supplanted by simpler and quicker means of reaching better results, yet it is also true that the field is still a half-opened book, and there are yet depths to which we may not reach and heights to which we may not attain. The chemistry of the photographic art finds its greatest students in those who seek to master its laws and solve its problems by persistent applications. He alone is the true amateur who finds both profit and pleasure in the development of the cult, in so far as we know it—from Alpha to Omega; from the exposure of the plate to the burnishing of the finished print, by his own individual effort.

The amateur photographer carries a free lance and the world of nature is his field; there is no spot upon which he does not level his camera, nor times nor occasion in which the snap shot is inopportune. Despite the fact that he finds himself in the field of the portrait taker and touches elbows with the professional who has perhaps many years of experience at command, yet there should exist no rivalry. The portraitist is circumscribed by his gallery and its thousand accessories which go to produce the marvelous results that are annually given to the world. The amateur claims the balance of the earth as his portion and wanders over it at his own sweet will. The keen eye that caters to a mind filled with elevating and ennobling sentiments, and trained to search out and admire the beautiful in nature and in art, is the ingrown gift of the true amateur, and he is the best picture maker "who in the love of Nature holds communion with her visible forms."

If we, then, in the leisure hours of life find our harsher composition softened in the pursuit of our hobby and instinctively we "look through Nature up to Nature's God," who shall gainsay the fact that photography does not make us better citizens, better Christians, better men. It inculcates the qualification of patience, it teaches the practice of exactness, it disciplines us to the rigid observance of chemical laws whose origin dates back to a time when this earth was young, it gives us a pride in the personality of our own achievements, and it teaches us to emulate the work of those who stand in the front rank, be they amateur or professional.

The boy who buys a camera with the intention of practicing the art of photography as a pastime has started out right; he has entered a vast domain, exhaustless in resources, for the development of every faculty in his composition, and he will find himself surrounded by a fascination that is bounded only by the ability of his pocket-book to gratify. But I tire you with generalities. Let us descend to particulars and speak of ourselves. Our programme sheet outlines our past and gives in brief the story of our existence. This you already know.

In the adjoining room we have displayed some of the results of our labor for your delectation. In this you will see what we can do and what we can promise for the future. Our club is an established fact, and Hoboken can rely upon hearing from us oftener than semi-occasionally, as our plans are rich in methods for future notoriety.

The amateur photographer has been pictured as a fiend and held up to ridicule alike by the funny artist and the funny paragrapher times without number, but the camera still lives and has its votaries. Thousands rise up to bless where one offers an anathema. The amateur has multiplied as the grasshopper, and to the peace of mind of the cynic and the grumbler, he is just as destructive. He is not so black as represented, however, nor so savage as written. The body over whose deliberations your speaker has the honor to preside fully attests this fact. We are all good-looking men, from our vice-president to the cleaning committee. We are not rich, although some of us are guilty of distributing some valuable lenses gratuitously along the West Shore railroad track, while others throw their cameras from water towers into the reservoir. Still others leave gold chains to fertilize the soil of Cornwall.

And now I have finished, our sole ambition aims at your applause. We are grateful for your appreciation of our work and trust to the future for proof of our worthiness to merit it. We are all united in one common purpose and that is to advance along the line of photographic work until we and our city bear the palm.

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Photography of the Least Refrangible Portion of the Solar Spectrum.

BY J. C. B. BURBANK.

It has been stated by eminent authorities that the process of staining dry plates with various dyes is not applicable to the photography of the invisible rays beyond the red of the solar spectrum. To test this question I have undertaken a series of experiments with the dye cyanine. This dye has of late come into considerable prominence in photography, owing to its orthochromatic effect when mixed with other dyes, such as chinoline-red, azaline, erythrosine, and eosine.

It was discovered by Greville Williams, an Englishman, in 1861, but did not come into much prominence until the year 1884, when its usefulness as a sensitizer became more apparent. The dye is easily decomposed by light, and even in the dark both its solution and the plates coated with it are apt to become decomposed if kept for any length of time. Alone, it has been found very useful to sensitize plates for the orange and red portions of the spectrum. No experiments have, to my knowledge, been made upon the effect of heat rays upon cyanine plates.

The direct action of absorbents in the infra red has not, hitherto, been tried with any success; moreover, it has been stated by so eminent an authority as Captain W. DeW. Abney that it was impossible to make plates sensitive to any rays below the A of the solar spectrum by means of the addition of dyes to a film. It is true, however, that Major Waterhouse has succeeded by means of turmeric in obtaining evidence of the existence of a few lines on the less refrangible side of A, but in all cases except one these were reversed.

The plates employed were made by the M. A. Seed Company of sensitometer 22. The method used in staining the plates and in the preparation of the dye is substantially the same as that employed by J. B. B. Wellington, and is as follows:

Fifteen grains of cyanine are gently heated (over a steam bath) for from thirty to forty minutes in combination with 1 ounce of chloral hydrate and 4 ounces of water. The whole mixture should now be stirred vigorously. While this operation is going on, 120 grains of sulphate of quinine are dissolved by heat in a few ounces of methylated spirit. (If methylated spirit cannot be obtained, a solution of 90% alcohol and 10% wood spirits will answer perfectly well.) One ounce of strong aqua ammonia is now slowly added to the cyanine mixture above. Violent ebullition takes place immediately, chloroform being evolved, and cyanine is deposited in a soluble form on the sides of the vessel. The mixture is allowed to settle for a few minutes, and then the supernatant liquid is decanted off very slowly, care being taken not to detach any of the cyanine that is formed on the sides.

To the remaining cyanine, three or four ounces of methylated spirit are added to dissolve the cyanine; the quinine solution is then added; and to the whole more methylated spirit, until the whole mixture measures from eight to nine ounces. This solution constitutes the "stock" solution, and should be kept away from all light, as it is very apt to become decomposed.

All of the above operations should be conducted in as little light as possible. The following staining and drying processes should be conducted in absolute darkness:

To thirty ounces of water are added 1½ drams of the cyanine stock solution; the graduate that contained the cyanine is now washed out, 1½ drams of strong aqua ammonia are added, and the whole mixture is stirred vigorously. Into this bath two or three plates, or half a dozen strips, can be dipped at once. They should be left there about four minutes; meanwhile the tray containing the plates should be rocked continuously, so as to insure a uniform action of the dye.

This bath, after having been used once, should be thrown away, as the action on a second batch of plates would be weak and imperfect. The plates can now be drained, dried, and used. While developing, I was careful to exclude all light whatever, although I think it possible that the plates may be developed safely in a dark greenish yellow light. The developer used was a pyro and potash developer of (generally) normal strength.

In the first experiments the spectrum was produced by a Rowland flat diffraction grating, mounted on a spectrometer circle. This grating contained 17,000 lines to the inch. The observing telescope of the spectroscope was replaced by a camera and lens.

Certain photographs were also taken by means of a Rowland concave grating of 14,500 lines to the inch, and of 21 feet 6 inches radius of curvature. With this grating, the amount of light being less and the dispersion greater than in the former cases, the exposure had to be increased.

In all of the experiments ruby-red glass screens were used in order to cut out all of the more refrangible part of the underlying spectrum. In some cases a weak solution of iodine in carbon disulphide was used with good effect.

No difficulty was found in photographing from the A line to wave-length 9900, or to the limit assigned by Abney as the limit of the diffraction spectrum. None of the lines were reversed. A special study of the A group was made, photographs being taken at different seasons in order to see if any changes in the remarkable group of lines constituting the A group could be noticed. No existing map represents this group correctly. Employing the second spectrum produced by a concave grating, 52 lines were observed between wave-lengths 7100 and 8000. In the same space Abney records only 24 lines. Between the head of A and the tail of A, the latter being the single line before the series of doublets begin which is so characteristic of the A group, my photographs show 17 lines. These photographs were taken in June between ten and one o'clock.

These results are of special interest when we consider that Abney has said in a Bakerian lecture, "As a result of these experiments I can confidently state that in no case did the addition of a dye cause any chemical effect to be produced by the rays below A of the solar spectrum, nor has Vogel claimed that they do."

It is interesting to note that Abney is led to believe that the photographic action, which has been noticed hitherto, by the use of dyes as sensitives, can be attributed to a certain action of nitrate of silver on organic matter. This effect is a bleaching one, and only the more fugitive dyes can produce it. We are led to conclude from Abney's paper, that he believes that only a chemical effect produced in a specially prepared emulsion can be used to reproduce the infra red rays. After many experiments he succeeded in producing such an emulsion. The color of this verged upon the blue. Since the color of plates stained with cyanine by the process I have described is also blue, there may be some physical significance in this resemblance.

My experiments show that a specially prepared emulsion is not necessary for the photography of the infra red region. The chemical theory advanced by Abney, therefore, seems to need revision.

—*Proceedings of the American Academy.*

INCREASE IN THE SUBSCRIPTION PRICE.

Notice is given that the subscription price of the AMERICAN AMATEUR PHOTOGRAPHER has been placed at $2.00, at which price it still remains the cheapest of photographic monthlies in proportion to the amount, variety, and quality of contents.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

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EDITORS:

W. H. BURBANK. F. C. BEACH, NEW YORK. W. G. CHASE, BOSTON

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EDITORIAL COMMENT.

We owe our numerous readers an apology for the lateness of the December number and our thanks for their patience under adverse circumstances. We do not propose to attempt any excuse for the inexcusable, but we shall do our best to avoid a future repetition of the offense.

With the advent of the new year the many photographic journals vie with each other in the announcement of attractions for the coming year. Each is sure of its own superiority to the others, and the reasons given for the belief are extremely varied. Our readers will bear us witness that we have not been over-eager to sound the trumpet of our own surpassing virtues, preferring to allow them to be discovered by careful reading. We do not fear the result of a comparison of the AMERICAN AMATEUR PHOTOGRAPHER with any of the other claimants for subscription favors, nor do we propose to attempt to increase our own importance by belittling any of our contemporaries, for whom we have nothing but good-will and kindly feeling. We shall do our best to make the magazine worthy of the cordial support it has received, and shall seek to render a full equivalent for the subscription price.

To our readers, one and all, we wish a " Happy New Year."

We wish to double our subscription list within the next three months. To do this we need the active assistance of our friends in the way of calling the attention of others to the magazine. We shall be happy to receive the names of persons likely to be interested in our work, and we will gladly mail descriptive circulars in any number to those who are willing to distribute them. Unfortunately, the expense of publication makes it impossible for us to mail free copies to the large number who apply for them. We inclose in each copy of this issue a descriptive slip, which we ask our readers to mail to a photographic friend in their next letter. We think that the magazine is one that every amateur should take regularly and we know that most of our subscribers agree with us.

Vinum bonum hedera non eget.—"Good wine needs no bush," and the present number of the AMERICAN AMATEUR PHOTOGRAPHER may safely be sent forth on its merits. It represents the ideal after which the editors are striving, a happy blending of the technical with the artistic side of our art. In the near future we hope to be able to give an illustrated sketch of a ramble with the camera in every number. For surely a photographic magazine worthy of the art it seeks to represent should not be content with a simple record of technicalities. Rather should it seek to give its readers month by month interesting and graphic descriptions of pleasant rambles along the country-side or loiterings in foreign lands, and so be representative of the most attractive side of the art, a gracious witness to its never-failing charm and attractiveness. This is our aim. Will our friends help us realize it by doing all they can to increase our subscription list and by favoring us with descriptions and prints of the places they have visited on photographic thoughts intent?

The work of three of the prize winners is represented in this number. That of the others will be given at intervals during the coming months. We do not wish with too lavish hand to squander our treasures too speedily, preferring to reserve a portion for future use.

Fixing Bath for Negatives Developed with Eikonogen.—The addition of an amount of sulphite of soda equal to one-fifth that of the hypo to the fixing bath with a small percentage of sulphuric acid is to be recommended on account of the fine printing color imparted to the negatives, the length of time the solution remains clear and the suppression of the alum bath made possible by the addition.

The Focusing Screen.—For ordinary work in the field the focusing screen should not have a too finely ground surface, which makes it impossible to render the landscape on the screen in bold sweeps of light and shade. Pettiness in detail is always to be avoided, and the focusing screen should be of such a nature as to render as nearly as possible the effect sought to be secured in the negative. For landscapes this is best obtained by the use of a rather coarsely ground screen.

We notice the name of M. Davanne, one of the veterans of photography, among the recent nominations for enrollment in the Legion d'Honneur.

Nuktigonia.—Dr. Miethe of Germany makes the assertion that this is nothing more nor less than a concentrated solution of a reddish-brown coloring matter known as tripæolin.

Glycerine is said by Mr. Goldby of England to be an excellent preservative of eikonogen. He recommends the following: Crystallized eikonogen, 7 parts; sulphite of soda, 14 parts; glycerine, 30 parts; water, 240 parts.

M. Luys has secured what is said to be a striking picture of the crater of Vesuvius. The camera was planted on the windward side of the crater on one of the numerous eminences formed by the out-throw of cinders. The print shows the crater clearly defined as a hole about thirty yards across, partly concealed by vapors rising from the interior. Some of the projected cinders are shown in the air.

There is probably scarcely a town of any size in the country where the advantages of a society organization could not be secured if photographers and artists would join hands. Such a union of interests would be advantageous to all concerned. The photographers could not fail to be benefited by intercourse with their brethren of the brush, while the latter would learn new lessons of the aid photography can give the artist from the lovers of the camera. Such a mixed club as this seems to us to possess many advantages over a purely photographic or artistic one, but we are subject to correction if our views are wrong. A valuable feature of such a club would be the exhibition, side by side, of drawings, paintings, and prints of the same subjects.

Now that the Eastman Company have perfected the flexible film it would seem not a difficult task to utilize the thin celluloid base in the making of long rolls of lantern slides. The slides might be made either on transferotype or carbon papers and transferred in proper order to the celluloid base, which, by a simple mechanism, could be caused to unroll before the condensers of the lantern. The method would seem to present no insuperable technical or mechanical difficulties, and we hope to see it realized in the near future. The attention of lantern slide clubs is called to the subject as one well worthy of investigation and experiment.

We learn that the Eastman Company have disposed of their English branch to the Eastman Photographic Material Company (limited.) Among the board of directors we notice the names of Messrs. George Davison, Andrew Pringle, and William H. Walker.

New Negative Reduction Method.—In *Photographisches Archiv*, Herr Gosselin gives a new method of negative reduction. The negative is soaked for half an hour in water and then treated with:

Water,	3½ ounces.
Sulphuric acid,	60 minims.
Solution of three parts of bichromate of potassium in 100 parts of water,	90 minims.

As the solution acts energetically its action must be carefully watched. The reduction is uniform and there is no staining.

A New Developer.—In the current number of the *St. Louis-Canadian Photographer* Dr. Vansant gives a formula for a pyro developer which he claims to be superior to hydro, eiko, or ferrous oxalate. The new developer is compounded as follows:

Distilled water,	1 ounce.
Tartrate of sodium and potassium,	25 grains.
Sulphite of sodium,	25 grain.
Carbonate of lithium,	1 grain.
Pyrogallol,	2 grains.

Mix and dissolve in the order given. When the developer loses its energy after frequent use it can be renewed by the addition of a few grains of pyro or lithium, or both, as may be required. This developer is said to keep well, to be free from all tendency to stain or frill, and to have great power of bringing out detail.

Mr. Charles C. McElvaine, Springfield, Mass., sends us a collection of prints for criticism. The composition is remarkably good in all, No. 6, a river view, being the best in every way. Nos. 3 and 4 show good atmospheric effect, due, in the latter case, to over-exposure or to the plate being slightly light-struck. No. 1 shows indications of under-exposure, and the camera was planted too near the middle of the field of view. No. 2, a view of Holyoke, has a poorly lighted foreground. The exposure should have been made when the sunlight was falling obliquely across the scene, preferably from the left, to throw the tree shadows well out into the center. No. 5 is technically the best and artistically the poorest of the lot. Mr. McElvaine evidently has an eye for the picturesque and he has every reason for feeling satisfied with his work.

Development of Instantaneous Exposures.—Mr. W. I. Lincoln Adams, in the January *Outing* gives the following formulas and directions for the development of quick exposures:

No. 1.—	Water,	12 ounces.
	Pyrogallol,	1 ounce.
	Granulated sulphite of soda,	2 ounces.
	Bromide of potassium,	80 grains.
	Citric acid,	60 grains.
No. 2.—	Water,	12 ounces.
	Granulated sulphite of soda,	2 ounces.
	Carbonate of potash,	3 ounces.

Three drams of No. 1, three drams of No. 2, and four ounces of water make the normal developer. As Mr. Adams wisely says: "The great secret of success in developing instantaneously exposed plates is to begin the development slowly and proceed cautiously throughout the entire process. The finest results are obtained by modifying the developer from time to time, as the negative may seem to require." In cases of extreme shortness of exposure it is recommended to soak the plate for two or three minutes in the following alkali solution:

Granulated carbonate of potash,	40 grains.
Granulated carbonate of soda,	40 grains.
Water,	5 ounces.

After this preliminary treatment the plate is transferred to the normal developer.

Snow Scenes.—In the same paper Mr. Adams gives some thoughtful directions for photographing snow scenes. For those scenes in which every object is covered with a snowy mantle, a side light, such as one obtains in the morning or late in the afternoon, is best on account of the long-cast shadows. Good lighting is also had when the sun is more or less obscured, thus softening the light and avoiding reflections. In this case the time of exposure must be moderately short and the development brisk, in order to produce contrast. For those scenes in which great contrasts of dazzling whites and deepest blacks are present the scheme of lighting must be the same, but the exposure should be somewhat prolonged and the development slow in order to diminish the excessive contrasts. Orthochromatic plates are recommended for this class of work. The developer should be weak in pyro at the start, adding more near the close of the process when the details are well out, to give density and snap.

New Kodaks.—From the Eastman Company we have received a new Kodak manual from which we learn that these boxes are now made in five sizes, from 2½ inches to 5x7. The larger sizes have focusing attachments and finders. No. 4 and No. 5 are of the folding class and are among the best of the hand-camera type of boxes. All these cameras were fully described in our September number.

A New Camera Club.—The Union County Club of Cranford, N. J., was organized November 25th with eleven members, and the following list of officers: President, R. M. Fuller; Secretary and Treasurer, John L. Warner, Roselle, N. J.

Mr. J. E. Davison, Secretary of the Providence Camera Club, has kindly sent us a print from the quadruple exposure negative mentioned in his monthly report. The four views were taken in the picturesque old town of Barrington, R. I., and the print is ample testimony to the value of the method described by Mr. Davison.

Mr. X. Cleveland, of Hyde Park, Mass., sends us a very effective dissolver for a single lantern. The device consists of an octagonal piece of glass mounted by a screw through its center on a block of wood which slips over the lens hood. One portion of the glass is left plain, another is ground, and the balance is covered with black paint shaded to produce a gradual obscuration of the light. When the clear portion of the glass is opposite the lens opening, the image is projected on the screen. By revolving the dissolver the ground glass portion is brought opposite the lens and a dimly lighted circle with no image is projected on the screen. The slides may now be changed without interfering with the comfort of the audience. By a still further revolution of the dissolver the light may be gradually shut off from the screen. The dissolver is simple and efficient.

Another Eikonogen Formula.—Mr. A. Peebles Smith now recommends the following formula:

A.

Eikonogen (crystals),	120 grains.
Water,	16 ounces.
Glycerine,	2 drams.
Alcohol,	2 drams.
Sulphite of soda,	3½ ounces.

B.

Water,	16 ounces.
Carbonate of soda (crystals),	6 drams.
Carbonate of potash,	3 drams.
Yellow prussiate of potash,	1 dram.

To develop a 5x8 plate use 2½ ounces of A and 1 ounce of B, adding from 6 to 8 drops of a 1 grain to 10 ounces of water, solution of bromide of potassium.

CORRESPONDENCE.

A CONVENIENT DARK-ROOM LIGHT.

To the Editors of the American Amateur Photographer:

Dear Sirs,—Noticing the mentioning of a new dark-room electric light by Mr. A. L. Simpson in the September number of the AMERICAN AMATEUR PHOTOGRAPHER, permit me to state of a light I have used with perfect safety for the last three years at least. Over my developing table I had an eletric lamp hung, eight candle power. I then procured a ruby chimney, such as are furnished with Anthony Oil Lamps with ruby chimney. A tinsmith made two caps, one for the lower end of the chimney, which excludes all light, the other for the upper end of the chimney, which also excludes all light, but has a hole cut out of sufficient size to be fastened to the socket and held by the lamp when screwed to its socket. Both caps fit tightly over the chimney, being about one inch in depth each. Now cover your lamp with the chimney by simply inserting the chimney into its upper cap and your lamp is ready for use. For very sensitive plates cover chimney with one thickness of post-office paper, or else remove from tray to a safe distance.

J. M. M.

Sirs,—Dr. Emerson's letter on the exhibition of photographs at Pall Mall is unlikely to disturb or interest American readers. It is equally certain that the exhibitors themselves can afford to be amused or indifferent, as the worthy Doctor is well known to be absurdly extreme in his ideas of art, and very unscrupulous in his criticisms as formed through his remarkably solitary pair of spectacles. I, myself, am one of those unpretentious or grossly incompetent votaries of photography who have practiced the art since the infancy of collodion, and yet have never exhibited a picture, good, bad, or indifferent, and the more I see of the judgment of *quasi* artists the more thankful I am never to have had a grievance against the Drs. Emerson of the hour.

What particularly amuses me is the way in which certain amateurs are propping each other up, who, in my hearing, have in times past smiled in pity upon one another. I particularly remember one of those scathing, scalpel-like criticisms, in which the Doctor excels, of one of his own great (?) "naturalistic" pictures which people were afraid of not believing in, for the Doctor was *the* man then. I allude to an awful abortion representing a man plowing up-hill with a pair of horses. The man's foot was as long as the horse's head and the whole picture so gloriously "naturalistic," *i.e.*, "fuzzy" or "focused with judgment" that it was denounced as an imposture. Another nondescript represented two women in a fog, apparently looking for something they had lost: not an iota of detail; all left to the fervid imagination of the "naturalist."

And yet "focusing with judgment" found a very reverse effect in a decapitated "head of an old salt." Every wrinkle, line, and spot was depicted as sharp as lens could make it.

Occasionally the Doctor has won the hearts of admirers over some lovely photographs such as "Gathering Water-lilies," but he is never free from adverse criticism; his boasted "subjects" are often inappropriate, as witness the woman "gathering," who suggests the wash-tub.

The name of an advanced student of the anti-focus or "fuzzy" school is descanted upon, but I have a lively recollection of that turncoat showing me work, the sharp focusing of which was his pride and delight. One thing is very patent in the Doctor's letter: he is more bent on vituperation—*vide* his rage at Robinson's masterly work—than on reformatory criticism, and his airs of superior judgment, to which he is his solitary witness, deprive him of any hope of being valued at his own estimate.

Anything more silly than his laudation of Mr. Davidson's pinhole pictures could hardly be conceived. They simply show what can be done with nothing, and how very undesirable the attempt is. The Doctor's pedantic desire to "Educate the great outside public" to his views of what photographs should be will never be realized by such asperity as he indulged in by his denunciations of "spurious effects," "meretricious clouds," etc., etc. His only chance lays in a practical demonstration of what art is, and I, for one of the many, fail to appreciate it in nine out of ten of his pictures, nor to realize it from his writings.

London. S. W. D. HARBORD.

To the Editors of the American Amateur Photographer:

Dear Sirs,—I beg to advise you, that at a recent meeting of our club, a resolution was adopted, extending to all members of the American Lantern Slide Interchange and photographic clubs generally, an invitation to visit our rooms. Letters of introduction from the President or Secretary of their respective clubs will insure recognition.

Yours Truly,

New Orleans, December 12, 1889. R. S. CHARLES, JR., *Secretary.*

To the Editors of the American Amateur Photographer:

Just a line concerning the *Amateur Photographer* and my criticisms in your paper. You will, of course, see why it is done, to try and split up the camp of naturalists. These anonymous letters, I have good reason to believe, are written by Robinson and the editor (Hastings, *not* Hepworth), who is especially bitter against me for this reason: when he started his quarterly he wrote to me begging me to supply *plates and text* and asking me to call upon him. I simply took *no notice* whatever of his letter after his ungentlemanly conduct (showed up by my letter in the *Photographic News*), but, notwithstanding, this he regularly *published my name* in his announcements of his new quarterly as a writer with whom arrangements were being made. This I never gave him leave to do. When some time elapsed and he saw I was going to cut him and have nothing to do with his quarterly, he wrote privately to a friend of mine and asked him to try and see what could be done with me to get in a plate of mine for the first number. Yours Faithfully,

P. H. EMERSON.

[We publish the above in justice to Dr. Emerson and in explanation of the recent attack upon him by the *Amateur Photographer.*]

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SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

PROVIDENCE CAMERA CLUB.

At the regular November meeting, Mr. Joseph A. Miller, Jr., exhibited some blue transparencies and explained his method of making them, which is, briefly, as follows: Coat a clean glass plate evenly with gelatine (one ounce gelatine to twenty of water) digested to proper consistency, which will have to be determined by experience. Allow gelatine to set for twenty-four hours, then sensitize five minutes in the same solution that is used for blue prints on paper; one part each ferri-cyanide potash, and citrate iron and ammonia, to ten parts water, is a good formula. It should be sensitized and allowed to dry in dark-room. It is found to give the best results if used immediately after drying. When dry enough to use expose in printing frame as for contact printing, the length of time required varying according to negative used, a good printing negative requiring at least an hour in strong sunlight. The progress of printing may be watched by turning back the back of the printing frame and examining by transmitted light. After printing, the plate is fixed by washing in water as blue prints on paper are. It is better to over-print rather than under-print, as the transparency can be reduced by the application of very weak ammonia water, about a drop of ammonia to a pail of water. Mr. Miller has been experimenting with these blue transparencies for about five years, and finds his only difficulty in coating the plates with gelatine. The plates should be slightly warm when the gelatine is poured on to facilitate the even flow of the coating. The results are very pretty when the operation is successful, and they make a decided novelty.

Another novelty shown at this meeting was a combination photograph having four exposures on one negative. This was made by the secretary, who explained the operation as follows: A series of masks with different shaped openings is made, care being taken to have no two openings lap over each other, and so arranged that the whole plate will eventually be exposed. The exposures need not be made at one time; by keeping a record of the parts already exposed the different views can be taken in several places. The masks are cut from card-board thick enough to stand in place by itself and are fitted into the camera just in front of the plate holder and as close to it as possible. This allows the drawing of the slide and making of the exposure without going into a dark-room to arrange the masks over the plate. It will be seen that careful timing is required, as the several exposures have to be developed at one development, and the exposures should be made with that object in view. The series of openings may be of any desired shape. It is a good plan to mark the masks so they will all face one way, to insure the proper placing of same in the camera. The cards should be placed in the camera before focusing, and each picture arranged for the opening through which it is to be taken. In many places are picturesque little bits that one may not care to use a whole plate on, but the combination of three or four on one negative in careful grouping gives, perhaps, more satisfactory results than the same views would if made separately. A slide from the negative exhibited has been placed in the set forwarded to the New England Lantern Slide Exchange by the club.

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A stated meeting of the society was held on Wednesday evening, December 4, 1889, with the President, Mr. Frederic Graff, in the chair.

The Committee on Lantern Slides reported that at the November Conversation Meeting, the first set of slides from the American Interchange for 1889-90 was shown, being those of the Society of Amateur Photographers of New York. About seventy-five slides were shown, the general standard being high, and showing an improvement over last year. Slides were also brought for exhibition by Messrs. George B. Wood, Dr. C. L. Mitchell, F. H. Rosengarten, and others.

The Committee on Membership reported the election to active membership of Mr. George M. Taylor and John Kearsley Mitchell.

The Executive Committee announced the opening of the exhibition of pictures contributed by members of the society, from which the four "Honor Pictures" for the year would be selected. The pictures were hung on the walls of the meeting-room, where they would remain until the annual meeting in January. During the month members would deposit votes designating their choice of the pictures in a box prepared for the purpose, and the result would be announced at the January meeting.

Nominations for officers and committees for 1890 were made.

A paper was read by Mr. Theodore H. Lüders, "On Development with Pyrogallic Acid in Connection with Ammonia in Vapor."

Mr. Morris Earle showed some novelties in photographic apparatus, which he had collected during a trip to England and the Paris Exhibition. Among them were some trays made of thick waterproof paper for developing, and other processes in photography. When not in use, by loosening metal clips at the corners the trays could be opened out into flat sheets, rendering them extremely portable. A small and exceedingly portable achromatic focusing glass, made by R. & J. Beck, was shown, also a neat leather case in which to keep or carry a lens with safety. Mr. Earle described a carrying case for film negatives to be attached to the back of a camera after the manner of a roll holder. The position of the films was changed by inserting the hand through a bag or sleeve. He also described a Panoramic View Camera which he had seen in Paris. A film or paper negative was used, being bent into a semicircle with the lens in the center. By a lever on top of the camera the lens could be revolved so as to cover different portions of the plate successfully. The light was admitted to the lens (which was of fixed focus) through a diaphragm in front in the form of a perpendicular slit, the opening revolving with the lens as it was turned. A unique feature possessed by the camera was the fact that if in one portion of the view dark objects predominated, requiring long exposure, the lens could be allowed to cover that portion of the view for a greater time, and less exposure be given to the brighter parts of the view, simply by properly manipulating the lever attached to the lens.

Prints from negatives made by the camera had been seen by Mr. Rau, Dr. Mitchell, and others, who corroborated Mr. Earle's account of their remarkable qualities.

Mr. John G. Bullock called attention to the late explosion of flash-powder in this city, with its terrible result in the death of three persons. The details were no doubt familiar to the members present, but as the photographic world at large may not have heard of it, he thought it right that the published minutes of the society should caution all to look with distrust upon flash-powders of a yellow color, and if they prove upon examination to contain picric acid along with powdered magnesium to consider them highly dangerous. Picric acid upon standing in mixture with powdered magnesium for a length of time is supposed to form picrate of magnesium, a highly unstable combination more dangerous than dynamite. A person finding a vial of such flash-powder in his possession had best dispose of it at once, but with great care. He is advised against pouring water upon it or burning it, but rather to throw the whole vial into a river or down some gorge where it would be scattered without doing harm. The very act of removing the cork from the bottle might be attended with serious results. The danger of picric acid flash-powders increases with age.

Dr. Mitchell fully agreed with Mr. Bullock, and considered all flash-powders, except those composed of pure magnesium, more or less dangerous, differing only in degree. Magnesium has a tendency to absorb moisture, in which state it readily combines with picric acid forming the dangerous picrate of magnesium. Even a single ounce of such powder would be exceedingly dangerous.

On motion of Mr. Wood, Mr. Bullock and Dr. Mitchell were requested to prepare a paper for the next meeting on the subject of flash-powders.

Mr. Rosengarten called attention to a method of preparing ground glass for focusing screens by the use of hydro-fluoric acid in combination with carbonate of soda.

Dr. Wallace spoke of the use of a solution of plain boiled starch spread upon a plate of glass, and allowed to dry, thus forming a very fine surface for a focusing screen.

Mr. Wood described a method of focusing without the use of any screen. If the position to be occupied by the plate is determined by a metal strip located in the usual position of the ground glass, by placing a focusing glass against this strip it will show (over a limited area, of course,) the image usually projected on the screen, and a proper focus can thus be readily obtained. A piece of plain glass can also be used in this manner as a support against which to place the focusing glass.

Dr. Mitchell asked the experience of members in regard to films, stating that he had found some rolls to be very good, and others not. He had noticed markings like long transparent lines as though scratched with a needle.

Mr. Lüders suggested that they may have been damaged in unpacking.

Mr. Wood stated that he had lately returned from a trip of over a thousand miles on which he had used films, and his feeling was that hereafter he preferred the weight of glass to the uncertainty of films. He thought nothing had yet been discovered to equal the perfect surface of glass, and the certainty of its results.

Adjourned.

ROBERT S. REDFIELD, *Secretary.*

NEW ENGLAND LANTERN SLIDE EXCHANGE.

Any photographic society may join the Exchange by subscribing to the rules and sending one dollar to the secretary.

Each society shall pay one dollar each year to cover necessary printing and postage expenses to be paid before November 1st.

Each society shall furnish every year not less than fifty slides made by its own members.

All slides must be of the standard size of 3¼x4 inches, properly matted and mounted. The picture shall be centered and made perpendicular to the four-inch side of the plate. Openings in the mat may be of any shape but must not exceed 4½ inches on the longest diagonal. Each slide must be numbered on the lower left hand corner to correspond with an accompanying invoice giving as many interesting particulars as possible concerning the pictures.

On December 1, 1889, and November 1st of each succeeding year, every society entering the Exchange shall forward its slides to the next club on the circuit, and on the first day of each month following, the slides shall be forwarded until all in the Exchange have made the entire circuit.

Any society entering the Exchange after slides have started will be assigned a place in the circuit and will receive the slides that have not passed it on their round.

No slide may be withdrawn after entering the Exchange until it has been the entire circuit.

Express charges shall be paid by society receiving slides.

Breakage in transportation shall be paid for by society shipping slides.

Members of the Exchange, with Address to which Slides Should be Shipped.—Boston Camera Club, 56 Bromfield Street, E. F. Wilder, Secretary; Lynn Camera Club, 42 Broad Street; Lowell Camera Club, 81 Appleton Street, G. A. Nelson, Secretary; Worcester Lantern Slide Club, 4 Elm Street, Dr. G. E. Francis, President; Springfield Camera Club, 465 Main Street, John C. Kemater, Secretary; Waterbury Photographic Society, ship to C. R. Pancoast, care of Waterbury Malleable Iron Company; New Britain Scientific Association, Rev. I. F. Stidham, President; The Camera Club, Hartford, ship to E. M. White, care of Howe & Collins, Phenix Building; Providence Camera Club, 87 Weybosset Street, J. E. Davison, Secretary.

The circuit has been arranged and the slides will be forwarded as follows: Providence, to Boston; Boston, to Lynn; Lynn, to Lowell; Lowell, to Worcester; Worcester, to Springfield; Springfield, to Waterbury: Waterbury, to New Britain; New Britain, to Hartford; Hartford, to Providence.

The dates thus arranged show the time during which the clubs may retain the slides: December 1 to December 21; December 21 to January 11; January 11 to February 1; February 1 to February 22; February 22 to March 15; March 15 to April 5; April 5 to April 26; April 26 to May 17; May 17 to June 7.

The Providence Camera Club is acting as Secretary of the Exchange for the ensuing year.

SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

Regular Meeting, December 10, 1889.—Flash Light Photography.—New Kodak Camera.—Solubility of Eikonogen.—A Mixed Hydroquinone and Eiko Developer.—"Photography from a Woman's Standpoint," by Miss Catherine Weed Barnes.

The meeting was called to order shortly after eight o'clock; Vice-President David Williams in the chair. Mr. G. D. Milburn exhibited the new No. 2 Kodak camera, explaining in detail the special features of the shutter, which operates in a slot in the lens tube between the lenses, and is provided with an additional slide or shield, which protects the lens while the shutter is being set. The shutter is similar in shape to the segment of a circle, pivoted at its angle, actuated at that point by a coiled steel spring. Operating in the same slot behind the shutter is a movable diaphragm plate, permitting the lens to be stopped down for time exposures. The size of the picture taken is three and one-half inches in diameter.

The No. 2 camera has a set focus, but in the larger one (No. 3) the focus may be varied. Mr. Milburn then made a flash-light exposure of the audience, developing the film negative up stairs. In the course of an hour he had a lantern slide prepared and dried from the negative, which Mr. Beach projected on the screen. The audience were surprised and delighted on seeing their pictures brought out so clearly. It was quite a novel feature in flash-light work, and is likely to become popular. Mr. Milburn stated that the first time he had tried it was at the Lynn Camera Club.

Mr. A. Peebles Smith read a paper on "Flash-Light Photography" (see page 15), following it with a series of lantern slides thrown upon the screen, designed to illustrate the peculiar actinic power of a special magnesium compound which he has invented, and with which the flash pictures were made. He found eikonogen was a good developer for collodio-bromide emulsion plates. One of his views was an excellent interior, showing ladies and gentlemen playing cribbage. In some cases the camera was 125 feet distant from the object photographed; requiring a flash of 120 grains of magnesium to obtain the effect. Following Mr. Smith, Miss Catharine Weed Barnes read a very entertaining paper on "Photography from a Woman's Standpoint" (see page 10), which abounded in common-sense practical hints. At its finish she was deservedly applauded. It was the first paper ever read by a lady before a photographic society in the United States that we are aware of.

Mr. A. L. Simpson, having just returned from a brief trip to Paris and London, related his pleasant experiences about it, saying, among other things, that he had secured upwards of three hundred negatives, all made with a detective camera and developed with eiko. He spoke of the courtesy tendered him by the officers of the London Camera Club, and others, and thought our society should reciprocate. Later a vote of thanks was passed to the London Camera Club, and the Secretary was requested to send them a cordial invitation to use our society facilities when any chanced to be here.

Mr. Beach spoke of his trial of a new one-solution developer (supposed to be a compound of eiko) sent to the society by Queen & Co., of Philadelphia, Pa., on some Eastman transparent films, which had been exposed instantaneously. (He passed around a few of the negatives.) He said the temperature of the developer was 65° F.; it took twenty minutes to bring the negative picture out with any show of density, then when it was fixed the negative was a trifle weak. For time exposures the developer might work well; but for quick exposures he preferred a solution stronger in eiko and potash as an accelerator. With this he obtained ample density, and the development occupied very much less time. It was not necessary to take the plate out of the developer until it looked pretty dense, as allowance must be made for its fixing out.

Mr. Jas. H. Stebbins, Jr., stated that he had recently carefully tested the solubility of the new eiko that comes in crystals, in distilled water at varying degrees of temperature. At 60° F. one part of eiko will dissolve in 36.2 parts of water. At 122° F., one part of eiko will dissolve in 6.4 parts of water. When it cools down some of the eiko will crystallize out. Based on this experiment the average degree of solubility should be one ounce of eiko to forty ounces of water. Mr. Stebbins also stated briefly the results obtained by the chemical committee in testing the sensitiveness of different dry plates by means of his pinhole sensitometre, and a sperm candle as an illuminant. He intends reading a paper on the subject at a later period, giving in tabular form the results in full.

Mr. Henry J. Newton was invited to give his latest formula on developers, and spoke very highly of hydroquinone, asserting that, without the addition of sulphite of soda, it was quicker than pyro, or eiko, as he had actually determined by experiment. In using the carbonate alkalis it was well known that some of the gelatine in the plate dissolved out, and entering into the developer, acted as a restrainer. That was why, with the carbonates of soda or potash used in connection with pyro or eiko, it was really not necessary to add a bromide. He had tested the value of his hydroquinone developer on a Carbutt B plate, by making an instantaneous exposure. The developer brought out a great amount of detail.

The developer is as follows:

Water, ...	1 ounce.
Sulphite soda, ...	30 grains.
Carbonate of soda (crystals), ...	20 grains.

Caustic soda,	3 grains.
Hydroquinone,	2 grains.
Eikonogen,	3 grains.

If desirable to slow the developer and make the negatives a little clearer, three or four grains of bromide of potassium may be added. Another developer which he recommended, and which should be used fresh, was

Water,	1 ounce.
Sulphite sodium,	15 grains.
Carbonate of soda,	20 grains.
Caustic soda,	3 grains.
Hydroquinone,	5 grains.

In this solution twelve or fifteen plates can be developed, one after the other, without showing color seriously. He advised keeping the hydroquinone in a separate solution made as follows:

Water,	1 ounce.
Sulphite of soda,	30 grains.
Hydroquinone,	6 grains.

The carbonate and caustic sodas are kept in another solution, and they are mixed with the hydroquinone just before use.

Miss Barnes spoke of the kindness and attention paid to her by the officers of the Pacific Coast Amateur Association, and at her suggestion a vote of thanks was passed and the Secretary was requested to invite them to enjoy the privileges of the society when here. The Secretary stated that it was the wish of the officers that members traveling here or abroad should invite any members of sister societies or clubs to enjoy the privileges of our society, in return for any kindness granted. The chair announced that F. C. Beach, A. L. Simpson, and C. C. Roumage had been appointed the committee of arrangements on joint exhibitions for the exhibition to be held in this city next year. Also that the subject for the regular meeting in January would be "Camera Shutters." On February 5th, a lantern slide entertainment is to be given at Chickering Hall, illustrative of New York and the Paris Exposition, entirely the work of amateurs. The Secretary read the names of several new members recently elected, and stated that the society had received the following new journals: *Photographic Quarterly, Photographic Societies' Reporter, Photographic Herald, The Photographer*, and *Bulletin of the Photographic Society of the North of France.* After a short executive session, appropriating money from the special fund, the meeting adjourned.

F. C. BEACH, *Secretary.*

LOWELL CAMERA CLUB.

First Annual Exhibition.

The first annual exhibition of photographic work by the Lowell Camera Club, held from November 12th to 16th inclusive, was the most successful exhibition yet held by Lowell amateurs. There were 320 prints hung upon the wall of Morrill's studio. These included eight bromide enlargements and fifty bromide prints. Twenty-four contributors were represented, all but three of whom were club members. The quality of the work shown was of a much higher order than that of any previous local exhibition, which is very encouraging, both to the exhibitors and to the other amateurs who are helped indirectly by the work of the club. The objects of these local exhibitions is to afford an opportunity to all interested to compare the best work of the year of members and other local amateurs. Such exhibitions tend to raise the standard of work of all concerned. Judging from indications, the interest in amateur photography is very much increased even among those who have not tried to practice it. There was a good attendance upon the exhibition throughout the week.

"A meeting of the Lowell Camera Club was held December 18th in Morrill's studio, when a series of slides were exhibited on the screen, the pictures shown being the contribution of the Lowell Club to the New England Lantern Slide Exchange. This exchange is made up of camera clubs in Boston, Providence, Lynn, Springfield, Hartford, New Britain, Worcester, Waterbury, and Lowell, and each club furnishes a set of slides with descriptive text. Lowell's contribution, shown last evening, consists of seventy pictures of varied character, many of which were seen in the recent annual exhibition commented on so favorably by the *Mail* at that time. The slides exhibited will be sent to Worcester and the work of the Lynn Club will be forwarded to this city and be exhibited early in January here."—*Lowell Morning Mail.*

NEW YORK CAMERA CLUB.

A very entertaining lantern-slide exhibition was given at the club rooms, on Friday evening, December 13, 1889, and consisted of views about Cooperstown, New York, from negatives taken by Dr. E. P. Fowler, Miss M. E. Martin, and Miss Louise M. Fowler. The collection was called a "Summer In and About Cooperstown, New York," the pictures being explained by Dr. Fowler. Among them were many attractive landscapes and interesting animal studies. The single office of secretary and treasurer has been divided, Mr. W. H. Wainwright now being Treasurer and Mr. W. W. Niles, Jr., Secretary. The next quarterly meeting occurs on the second Wednesday of January.

PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

An informal meeting was held November 20, 1889, presided over by President H. J. Newton. Mr. Newton still liked the combined eikonogen and hydroquinone developers. Mr. Thomas Harris, connected with Kurtz, the photographer, spoke very highly in favor of the eiko developer. Dr. Bartlett thought expressions for or against it should not be made too strong until it was more carefully tested. Mr. J. B. Gardner took some exceptions to an article on "Printing and Toning" in the November number of the AMERICAN AMATEUR PHOTOGRAPHER (which we will answer in a future issue). President Newton thought forty grains of silver to each ounce of water was the best proportion for a silver printing bath and advised a strong toning solution.

December 3d, a lantern exhibition of a "Trip Through the Hebrides," on the north coast of Scotland, was given before the Section, by Randall Spaulding, of Montclaire, N. J., and was very enjoyable, being marred slightly at the end by the unfortunate giving out of the gas. A discussion on the new developers also occurred.

December 18th, Mr. G. D. Milburn demonstrated the Eastman Transparent Film, taking a flash-light photo of the audience, with one of the No. 2 Kodak Cameras, and Mr. T. C. Roche made some remarks on developers.

THE SCHUYLKILL CAMERA CLUB.

The December meeting was held on 9th inst. at Mr. Davis' residence. The entire evening was given up to the exhibition of slides, among which were fifty views of Paris, shown by Mr. Davis. Mr. Toussaint also exhibited five panorama views of Pottsville, taken from the various hills which surround the town. The views were taken on Carbutt's orthochromatic Plates and were very fine and were greatly admired by the club. The membership of the club has increased to forty-four. The next meeting will be held in January and it is expected to arrange for the annual exhibition at that meeting.

JAY G. SHUMWAY, *Secretary.*

NEW ORLEANS CAMERA CLUB.

The club held its annual election of officers on Wednesday, November 27th. The following is the list of the newly-elected officers: President, H. T. Howard; Vice-President, Joseph A. Hincks; Secretary, R. S. Charles, Jr.; Treasurer, P. E. Carriere. In each case the Secretary was ordered to cast the vote. All of the present incumbents have been re-elected, with the exception of Mr. R. S. Charles, Jr. The following committees were appointed to serve for the ensuing year: Finance Committee—S. L. Mitchel, chairman; B. C. Shields, and Charles H. Fenner. Membership Committee—Dr. William R. Mandeville, chairman;

James Moulton and George H. Dwyer. Lantern Committee—Horace Carpenter, chairman; Placide Reynes, L. E. Bowman, T. W. Castleman, and Reeve Lewis. The usual reports were read and showed the club to be in a flourishing condition. The membership now includes seventy-one active, eleven honorary, and four corresponding members.

For the complimentary lantern slide exhibition, Friday, the 9th inst., at which the Louisville Camera Club slides will be shown, Mr. Horace Carpenter was appointed lecturer.

THE AMATEUR PHOTOGRAPHIC SOCIETY OF BALTIMORE.

A regular meeting was held on the evening of December 20, 1889, in the rooms of the society, 106 North Charles Street, President Norris presiding. There were eighteen members present. The resignations from active membership of three members were favorably acted upon, and names of two persons were referred to the Executive Committee for its approval, before the ballot of the association be taken. The different working committees then made reports and usual routine of business was gone through with. When the lantern was lighted, the slides of the Boston Camera Club, together with the reading of the lecture accompanying them, entertained the members until after eleven o'clock, when the meeting adjourned.

The society gave its first regular lantern night on Friday, December 13th, on which occasion there were present about 175 spectators, composed of the members and their friends. The slides of the Philadelphia Photographic Society were made use of and were highly complimented by all who had the good fortune to be present. The society anticipates much pleasure this winter in its connection with the American Lantern Slide Interchange. Already more interest is shown, and many are falling into the ranks of the slide makers, and attending our Friday night meetings to enable themselves to gather information in this line from the older workers who are always present on these occasions.

HAWAIIAN CAMERA CLUB.

The first public exhibition of the club was held at Honolulu on the evening of November 22d. Fourteen members of the club were represented and the exhibition was highly spoken of by the local papers.

From the list of exhibits kindly sent us by one of our subscribers, Mr. A. W. Richardson, the secretary of the club, we judge that bromide prints have the preference in the Sandwich Islands.

BROOKLYN SOCIETY OF AMATEUR PHOTOGRAPHERS.

An informal reception and exhibition of prints was held on Saturday evening, December 28th, under the auspices of the society, at a hall on the corner of Fulton and Jay Streets, Brooklyn. The exhibition was very creditable and the reception was a very pleasant social affair.

On Saturday evening, December 21, 1889, a very enjoyable "Smoking Concert" was held at the rooms of the society. Lantern slides, music by members of the society, character performances, illustrations of mesmerism and sleight-of-hand tricks formed the chief diversions of the evening, which were kept up till a late hour. A flash-light picture was made by Mr. A. Peebles Smith. Altogether, it was one of the best smoking concerts ever given, and the committee having the matter in charge are to be congratulated on their success.

Friday evening, December 27th, an exhibition of lantern slides, representing the work of the Cincinnati Camera Club and of members of the society, was given, which was thoroughly enjoyed. The society sends the exhibits, at its informal exhibition, to the Young Men's Christian Association, Twenty-Third Street and Fourth Avenue, for exhibition on New-Year's Day.

QUERIES.

13.—A subscriber asks for a remedy for albumen blisters in prints.

14.—M. R. D. asks: "1.—How can unmounted silver prints be prepared so that they will not curl when dry? 2.—Can prints be mounted in a book so that the leaves will remain perfectly flat? 3.—I wish to have some negatives enlarged, but do not wish to do the work myself. Will you please give me some information on the subject? I should like to know how much a good negative can be enlarged and where it can be done? Also, if enlargements are usually satisfactory."

ANSWERS.

13.—In many cases blisters are caused by exosmose action between the water and the fixing solution, the albumen acting as a septum. In such cases the remedy is to plunge the prints immediately after fixing into a saturated solution of salt and keep all solutions at the same temperature. In other cases the blisters seem to be caused by an accumulation of gas behind the albumen film. In this case the best remedy is to plunge the prints into alcohol as soon as the blisters make their appearance. If these remedies fail, the paper is at fault and should be returned to the dealer.

14.—1.—If a trace of glycerine be added to the last wash water the prints will not curl when dry. Curled prints are easily straightened by drawing them between the edge of a paper knife and some hard, smooth surface. 2.—Not easily. A thin mounting solution will help matters somewhat. A gelatine mountant is the best for the purpose. The following is a good formula: Soft gelatine, 90 grains; soak in water (3 ounces) for an hour. Dissolve in a water bath, and add one ounce of alcohol in small quantities, with vigorous stirring. The prints should be covered with waxed paper when mounted and the book placed in a copying press or between boards, under a heavy weight, until dry. 3.—A good negative, which is thoroughly sharp, will bear enlarging up to four or five diameters and often to the improvement of artistic effect. Enlargements from good negatives are usually satisfactory. M. R. D.'s nearest photographer will be able to do the work or recommend a reliable enlarging house.

BOOKS AND EXCHANGES.

The American Annual of Photography and *Photographic Times Almanac* for 1890 will not disappoint its readers. The high standard of previous issues is well sustained by the contributed articles and surpassed by the number of the illustrations. We would prefer, however, a smaller number of higher grade cuts, but this is purely a matter of taste. The usual amount of tabulated information is given. We notice some inaccuracies and omissions in the Club and Periodical lists, but these are unavoidable in the rapidly changing condition of things in these two particulars. As a whole we regard this as the best photographic annual yet issued. C. W. Canfield, editor. The Scovill & Adams Company, New York. 50 cents and $1.00.

"Manuel De Phototyie," M. G. Bonnet. This is a practical treatise on Collotypic printing, giving the latest information on the subject. The special apparatus used in the process is so well described and illustrated as to make its construction by the experimenter a comparatively simple task. The method in which a copper plate is used as a support for the gelatine film is described in detail, as well as the more common glass method. 2 fr. 25 c. Paris, 1889: Gauthier-Villars et Fils, Quai des Grands, Augustins, 55.

LE TEMPS DE POSE. A. de la Baume Pluvinel. 2 fr. 50 c. Paris, 1889; Gauthier-Villars et Fils, as above.

There has long been need of a hand-book dealing thoroughly with the question of scientific exposure. The first section of the present work deals with the question of exposure from the mathematical standpoint, giving formulæ of great value. In the latter sections these formulæ are practically applied to representative exposures. The book is a thoughtful contribution to the literature of photography.

DIE PHOTOGRAPHIE MIT BROM-SILBER GELATINE. Ludwig David and Charles Scolik. Halle, 1889; Wilhelm Knapp.

When an eminent professional and an equally eminent amateur unite to write a treatise on photography the chances are largely in favor of a valuable work. The present book is no exception. The first volume of the second and enlarged edition has been received. The authors have divided their subjects into six parts: 1. Manufacture of emulsions. 2. The use of gelatine plates. 3. Orthochromatic photography. 4. Failures and methods of preventing them. 5. Collection of receipts, etc. 6. Instantaneous photography. The present volume deals exhaustively and practically with the first two divisions, and with the possible exception of Dr. Eders' great work on the same subject, it is by far the best treatment of the subject we have seen. An English edition would speedily become a photographic classic.

The Christmas issue of the *Photographic Times* is a distinct advance over previous issues. The illustrations are of the highest order, and the contributed articles are marked by literary excellence of no mean quality. It is a notable number, and we congratulate publishers and editor on their good work.

Outing for January tells in a most interesting manner about "Alligator Shooting in Florida." The author, J. M. Murphy, is thoroughly familiar with the sport, and entertainingly describes it. Prospective alligator hunters should read his paper attentively. "Instantaneous Photography" is the subject of a second paper by W. I. Lincoln Adams. This is indeed a popular pastime. Mr. Adams' remarks are most timely, and coming as they do from an acknowledged authority, should reach the eye of every amateur photographer. The article is beautifully illustrated. "Fly-catcher" continues to hold the attention of *Outing's* readers. The installment in the January number is most interesting.

The December number of the *Photographic Art Journal* (British) completes the second volume of this valuable magazine. The number contains two full-page illustrations and much valuable reading matter, including a duly credited reprint of Mr. A. Peebles Smith's paper on the "The Eikonogen Developer" from our November issue and an appreciative notice of the AMERICAN AMATEUR PHOTOGRAPHER.

TRAITE ENCYCLOPEDIQUE DE PHOTOGRAPHIE. Charles Fabre, D.Sc. Volume II., Part I., pp. 80. Paris: Gauthier-Villars et Fils. 2 fr. 50 c.

Volume II. of Dr. Fabre's great work is to be devoted to "Negative Methods." The present part begins the discussion and carries it through the paper and albumen processes to the wet collodion method. The processes given are those by which the best results were obtained before the days of the dry plate, and, while there are few who would care to practice them in these days, they rightfully claim a place in an encyclopedia of the science.

EXPERIMENTAL SCIENCE. ELEMENTARY, PRACTICAL, AND EXPERIMENTAL PHYSICS. George M. Hopkins. New York: Munn & Co. Pp. 720. $4.00.

Mr. Hopkins is well and favorably known as a fascinating writer on scientific subjects, and he has won much commendation for his articles on experimental physics published in the *Scientific American.* These articles, together with much additional matter, are now for the first time made accessible in book form. The book with its nearly seven hundred engravings will gladden the heart of every student. Simple, clear, and lucid in style it is equally adapted to the young student and the learned professor, both of whom will find it most entertaining reading. Directions are given for demonstrating most of the laws of physics with every day tools and common appliances. The chapters on photography, the microscope, and the optical lantern make it a volume which every photographer should add to his library. We write with enthusiasm, but the work deserves it. We will supply the book at the publishers' price.

FOREIGN NOTES.

The *British Amateur Photographer* takes us severely to task for publishing Dr. Emerson's strictures on the Pall Mall Exhibition, and prints several columns of indignant letters from English correspondents. Dr. Emerson's opinions, as published in this journal, are his own, not necessarily those of the editors. As a matter of common fairness we reprint below one of the letters to the AMATEUR PHOTOGRAPHER. A letter on the same subject from Mr. Harbord will be found in the "Correspondence Column." We may add that our columns are open to any English photographer who may wish to criticise the exhibition from a different standpoint. The letter to the AMATEUR PHOTOGRAPHER is as follows :

"SIRS,—In a leaderette on Dr. Emerson's 'English Letter,' reprinted from the AMERICAN AMATEUR PHOTOGRAPHER, in your last week's issue, you justly remark on the narrowness and onesidedness of such a criticism of the late exhibition of the Photographic Society. It would indeed be unfortunate if all the exhibitors at Pall Mall were to become his disciples, for one of the great charms of these annual displays lies in the diversity of treatment of the subject, and variety of modes of printing, which would be almost entirely lacking were the naturalistic school alone represented. Dr. Emerson, who represents this school, objects to combination printing. Now, this method to me constitutes a great advance in artistic photography, for it permits more of the personality of the workers to assert itself, giving scope for selection and design, and still further justifies the claim photography makes to produce a picture—a claim denied by many on account of the absence of the above and other art qualities. I imagine, also, that Dr. Emerson's prejudice against combination printing is such that he would condemn any picture in the exhibition as being 'false clouded,' did he know beforehand that the device of double printing had been resorted to, but I am sure that in the case of most of the works that he criticises no competent art critic, unacquainted with the method, would be able to say that the skies had not been taken simultaneously with the pictures.

"The question of artistic focus has been very ably dealt with by Mr. Graham Balfour in the *Photographic Quarterly*. It is really, I think, very much a question of style, but the subordination of detail should undoubtedly have reference to the size of the photograph, if only from the fact that the large picture is viewed from a greater distance than the small one, and therefore much minute detail would in the former appear irritating and confusing, since it would not be clearly defined at the proper distance required by the eye to obtain the most comprehensive view of the whole subject. .

"To conclude, pray let us have as many schools and as much variety as possible, and by no means let us keep the camera idle because a mist hangs over the landscape (here the naturalistics can work with some show of reason), but let us catch all the atmospheric effects obtainable, and make use of all the printing processes having any beauty in them that we can muster (not excluding our old friend, silver), and then I feel assured that photography will find itself increasing in favor still more rapidly with the *connoisseurs* of art.

I remain, Yours, etc.,

EUSTACE CALLAND."

Capt. Abney's thoughtful paper on "Clouds in Photographs," published in a recent number of *Photography* (English), should be read by every amateur. Speaking of double printing he say: "The photographer should beware of the defects which such an artifice may give rise to. The clouds so inserted are usually from negatives which are under-exposed, in which the blue sky is hardly allowed to impress the plate at all, whilst the clouds impress it slightly, and density is given by vigorous treatment. This cloud effect is as incorrect as it is when the exposure is too prolonged, as it is, as a rule, when a landscape is taken at the same time with it. If a separate cloud negative be employed at all, it should be so exposed that the comparative luminosities of sky and landscape are shown in approximity to that relationship, and it should be printed to such a depth that it harmonizes with the landscape. It must be mentioned that harmony, in this case, not only means correct luminosity in monochrome, but also it means that the sunlight illuminating the cloud shall come from the same direction as that illuminating the landscape."

Mr. T. N. Armstrong, writing to the *British Journal* on "The Improvement of Faulty Negatives," advocates the making of transparencies from negatives showing opaque spots, and, after touching up the transparencies the printing negative is made from these transparencies. He greatly prefers the method of making transparencies in the camera to the contact method, since the former gives greater power of dodging weak parts in the original negative.

◆

Index to Current Photographic Literature.

Developers and Development; Photographic Art Journal, December 2d.
Silver Printing on Plain Paper and Other Surfaces; Photographic Art Journal, Dec. 2d.
Lantern Slides; Photographic Answers, November.
Preservation of Photographic Pictures; Photo. News, December 6th.
The Roller Blind Shutter; Photo. News, December 6th.
The Improvement of Faulty Negatives; British Journal of Photography, December 6th.
Amateurs and Toning; British Journal of Photography, December 6th.
Clouds in Photographs; Photography, December 5th.
Hand Cameras; Journal of the Camera Club, November.
A New Platinum Toning Process; Journal of the Camera Club, November.
Orthochromatic Plates; Bolletino Di Fotografia, November.
Art at the Exhibition in Boston; Wilson's Photo. Magazine, December 7th.
Ornamental Printing in Photography; Boston Photographic Review, December 4th.
Eikonogen and Pyrogallol; Anthony's Bulletin, December 14th.
Salt as a Hypo Eliminator; Photo. Times, December 6th.
The Pyro-Tartrate-Lithia Developer; St. Louis-Canadian Photographer, December.
Instantaneous Photography; Outing, December and January.
Christmastide in Shakespeare's Country; Photographic Times, December 20th.
Winter Pictures; Photographic Times, December 20th.

◆

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

We have had an opportunity of testing the lantern slide plates advertised by E. L. Elliott & Co. in this issue, and we have no hesitation in pronouncing them the best we have ever used. They have a fine, almost structureless film, develop easily and quickly, and fix almost instantaneously. The finished slides are very like those made by the albumen process, and various tones may be produced at will by the modifications recommended by the makers. The extreme fineness of the deposit on the film should make the plates of great value for making photo-micrographic negatives. We advise our readers to send for a trial dozen.

The specialties advertised in this issue by Queen & Co. and Miller & Co. are worthy of notice. Queen's new Ultimate hand camera, of which mention was made in our December issue, combines many desirable features which have long been conspicuously absent from this class of cameras. The "Ultimate" developer would seem to place a new power in the hands of the operator.

Miller & Co.'s ruby lanterns, compactum shutters, and imperial gray paper are highly spoken of by those who have used them.

We are guilty of no breach of confidence in stating that the negatives of Mr. F. Adolphi Muench, one of our prize winners, were all made on Wuestner's New Eagle plates. Mr. Muench's prints bear abundant testimony to the good qualities possessed by these plates.

ERRATA FOR THE DECEMBER NUMBER.

On page 233, in the formula for ferric-oxalate, substitute "acid" for "alkaline" in the words, "the reaction should be decidedly alkaline."

On page 234, "chloro-platinate of platinum" should read "chloro-platinate of sodium." This method is not applicable to the ordinary platinum printing process. The description of the method was inadvertently omitted and will be given in the February number.

◆

United States Photographic Patents

ISSUED IN DECEMBER, 1889.

DECEMBER 3d.

416,290—Apparatus for Exhibiting Panoramic Views and the like; R. Eschè, Geneva, Switzerland.
416,295—Picture Exhibitor; G. Kobich, New York.
416,440—Photographic Camera-Shutter; A. and L. Chronik, New York.
416,621—Combined Photographic and Card File; D. H. Howd, Paterson, N. J.
416,650—Photographic Camera; C. P. Stirn, New York.

DECEMBER 10th

416,938—Photographic Camera; G. S. Moler, Ithaca, New York.
417,045—Photographic Camera Plate-Holder; M. Jurnick, Jersey City, N. J.
417,131—Photographic Camera; Oscar Anschütz, Lissa, near Posen, Prussia, Germany.
417,153—Photographic Burnishing Machine; H. Crary, Chicago, Ill.
417,202—Manufacture of Flexible Photographic Films; H. M. Reichenbach, Rochester, N. Y.

DECEMBER 17th.

417,263—Photographic Apparatus for holding and exposing sensitive plates; W. C. Merrill and E. E. Wingo, Baltimore, Md.
417,422—Magnesium Flash-Light Apparatus; J. J. Higgins, New York.

DECEMBER 24th.

417,863—Camera Box; J. W. Freedle, Cleveland, Ohio.
417,871—Photographic Camera; H. Laney, Cumberland, Md.
418,064—Combined Plate-Holder and Printing Frame; Jos. M. Rhodes, Covington, Indiana.
418,065—Plate-Holder for Cameras; Jos. M. Rhodes, Covington, Ind.

SALE AND EXCHANGE.

[This department is for the benefit of SUBSCRIBERS who have photographic material, apparatus, or books, which they wish to exchange, and such wants will be inserted free of charge. The number of insertions given will depend upon the number of exchanges received each month. Subscribers will please notify us when articles have been exchanged or sold.]

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For Sale—Bausch & Lomb universal lens, medium stop, covers 8x10. New. $30.—*B., care of Am. Am. Photographer, Brunswick, Me.*

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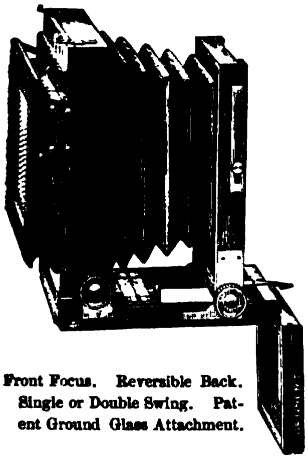

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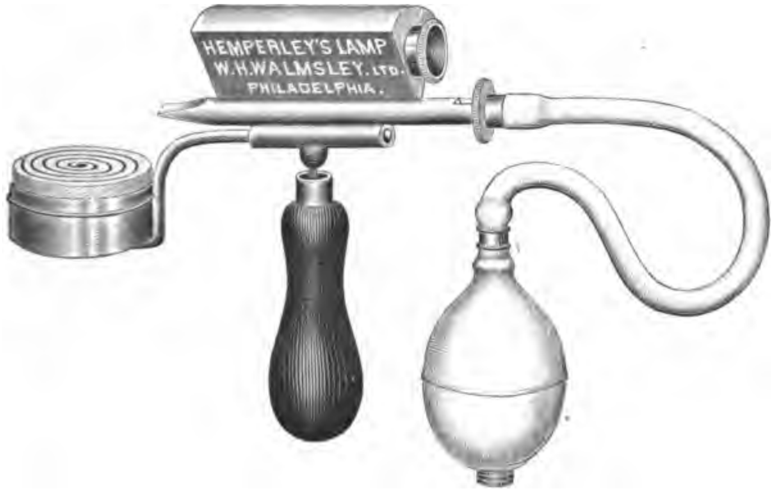

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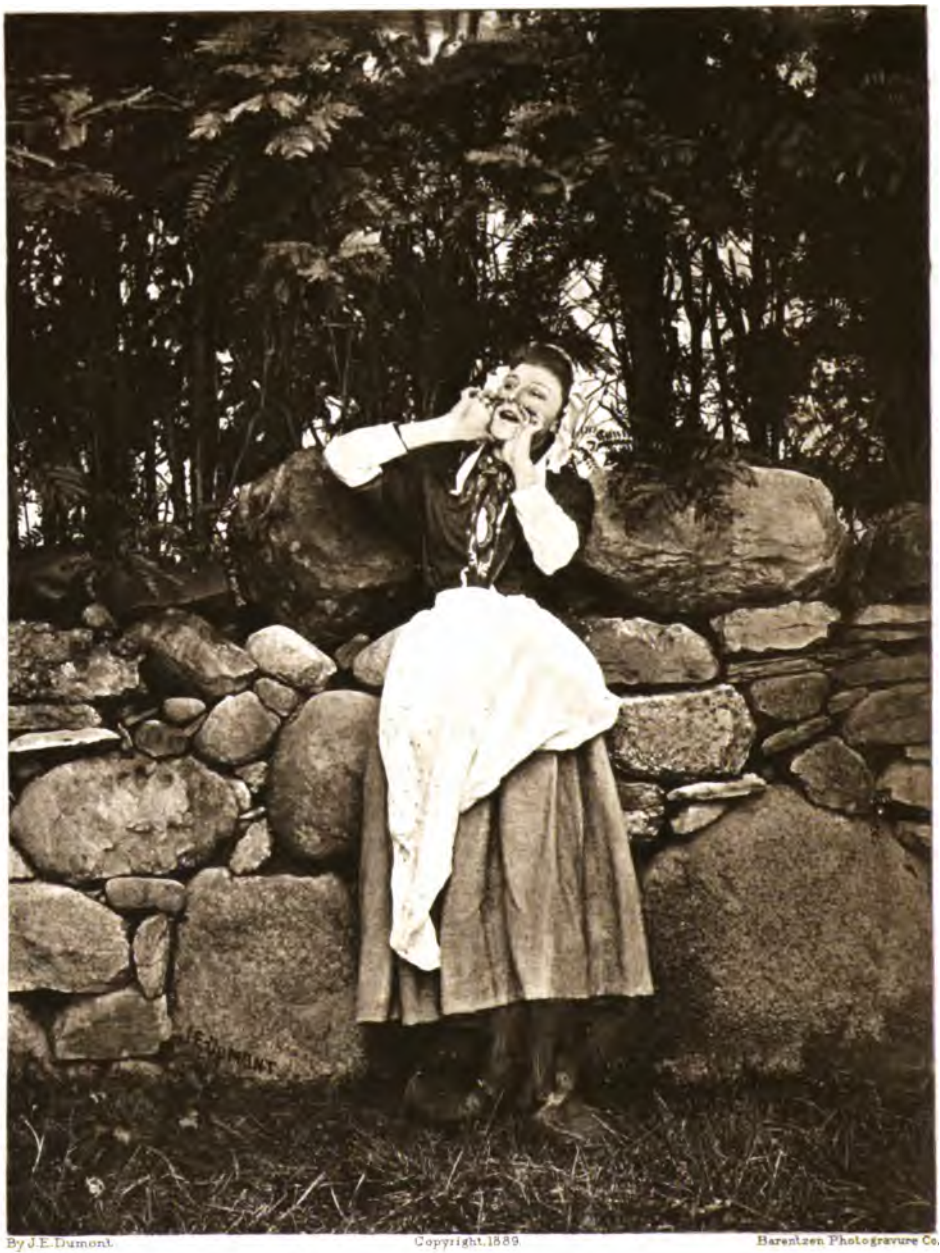


By J.E. Dumont. Copyright, 1889. Barentzen Photogravure Co.

"HELLO."

THE AMERICAN

AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., FEBRUARY, 1890. No. 2.

Our Illustration.

WE are so fortunate this month as to be able to present a photogravure of one of Mr. Dumont's latest productions, rightly named "Hello." We think that our readers will agree that Mr. Dumont has caught the spirit of the subject and that he has reproduced it well on the sensitive film. Genre photography has its difficulties but it is a field well worth cultivating, and one which the amateur will find full of pleasure and profit. Mr. Dumont's "Hello" will prove suggestive and instructive.

◆

Modified Collodion Emulsion.

By A. PEEBLES SMITH.

IN an illustrated address before the Society of Amateur Photographers a slide was exhibited made by myself with collodion emulsion. At that time I remarked that in one of the journals I would explain how such an emulsion could be made in ten minutes.

That collodion methods are but little used in the production of lantern slides by amateurs goes without saying. "Takes too much time—costs too much." One might say that emulsion making was the thief of time, chemicals, etc It is not only this; but time is the thief of emulsion, especially in the amateur's hands, as he can only use a small portion at a time, and the emulsion becomes of the consistency of water with age—entirely useless. To gain time and prevent collodion emulsion from sinking into the silver waste, or oblivion, and to show its cheapness, is the purport of this article.

Before acquainting the reader with the rapid ten-minute method, possibly a description of the actual practice heretofore indulged in, and its subsequent cutting down in time, and the preserving of one's good nature would be of interest.

In the first place, to make an emulsion by collodion methods, it is essential we have some bromo-iodized collodion. The formula in use is as follows:

COLLODION.

Alcohol,	1½ ounces.
Ether,	2¼ ounces.
Gun-cotton,	40 grains.
Iodide of ammonia,	15 grains.
Bromide of cadmium,	54 grains.

First take the alcohol and dissolve the iodide in it. Take next your bromide and grind it in a mortar, adding a few drops of distilled water. Now pour the combined alcohol and iodide gradually into it, grinding constantly until nearly all the bromide is taken up. A slight precipitation occurs, but if well ground will be very small, and of no serious consequence. Gradually add the ether to the alcohol, iodide, and bromide, shaking it with a kind of circular motion. Add the gun-cotton; filter it through a tuft of cotton saturated with alcohol, and put away to ripen for a week. If white iodide is used, and the collodion does not become a deep cherry color, by adding two or three drops of iodine the collodion will be in prime condition for sensitizing.

SENSITIZING.

Dissolve in a test tube by gentle heat 75 grains of nitrate of silver in one dram of distilled water, adding 4 drams of alcohol, which has previously been heated in another test tube. Now go into your dark-room and by orange light gradually add the alcoholic solution of silver, giving it a vigorous shaking after each addition, finally rinsing the test tube with 2 drams of alcohol and adding it to the emulsion. After shaking well, add to the finished emulsion 3 drops of nitric acid. Care must be observed to keep silver solution heated, else precipitation will be the result, and though it may not spoil the emulsion, the bromide of silver formed will be in a very coarse state, making it useless for lantern positives.

It will be observed from the foregoing that to make an emulsion we merely make bromo-iodized collodion and sensitize it. In other words we take the collodion of the old wet process and fire the silver bath into it. Well-ripened bromo-iodized collodion can be obtained in eight-ounce bottles from any of the leading photographic stock-houses, at a less cost to the purchaser than the amount of bromides, iodides, ether, alcohol, etc., necessary to the making of the same amount of collodion. Provided with an eight-ounce bottle as above, take 4 ounces of its contents and follow instructions given in this article headed "Sensitizing," and the result is a collodion emulsion which should not have taken more than *ten minutes* to complete.

Emulsion so made does not keep for any length of time; nor does the amateur so wish it, as he is compelled to work spasmodically.

Make the emulsion the evening before the day you intend using it. Secure a slab of plate glass; level it, covering its surface with well-cleaned albumenized glass, 3¼ x 4. Measure out 1½ drams of emulsion; pour in the center of each plate. When the surface becomes tacky, wash in two or three changes of distilled water; allow the plates to soak for two minutes in a tincture of quinine of the following strength:

Water,	5 ounces.
Tincture quinine,	2 drams.

Wash again in distilled water, and dry by gentle heat. When dry the plates are ready for exposure. The albumen solution is made by dissolving the white of an egg in three pints of water and filtering through cotton saturated with alcohol. It is best to filter the emulsion at the time of coating the plates. If four ounces of collodion makes more emulsion than can conveniently be coated for use the following day, cut down the formula, preserving the proportions, thereby saving loss of emulsion and time of coating plates.

Having exposed the plate, we now take up its development. The exposure should be about four times as long as that given a very slow gelatine plate. One point to be remembered in the development of collodion emulsion is that it cannot stand a very great amount of alkali. The slides shown at the Society of Amateur Photographers were developed with eikonogen in the following proportions:

Eikonogen,	2 grains.
Water,	1 ounce.

The alkali being *one drop* of a saturated solution of carbonate of soda. Previous to applying the developer the plate was soaked in a solution of alcohol, two parts, water, one part. After fixing and washing, the plate is intensified with pyro and silver as used in wet process, proportions as follows:

A—Pyro,	24 grains.
Citric acid,	24 grains.
Acetic acid, No. 8,	½ ounce.
B—Nitrate silver,	40 grains.
Citric acid,	10 grains.
Water,	8 ounces.

If old ferrous oxalate developer is used, no intensification is necessary; but resulting eikonogen tones are unsurpassed—not even by the carbon process.

Camera Shutters.

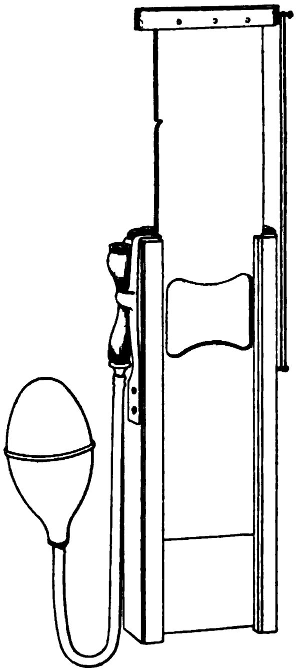
BY F. C. BEACH.

[Read before the Society of Amateur Photographers of New York, January 14, 1890.]

THE year 1890 completes the first ten years since the gelatine dry plate was commercially introduced in this country, a period also marked with the rapid improvement of devices for making quick exposures in the camera, as well as inventions for quickly changing plates.

It is an obvious fact that the development of instantaneous photography in America has been more complete than in any other country: first, because our manufacturers are more enterprising in perfecting compact and efficient apparatus for making rapid exposures; secondly, because we have quick plates; and thirdly, because we have such a generally clear atmosphere and strong light. It is only a few years ago that it was quite a novelty in London to see on exhibition there an American detective camera. Only three or four years ago I was asked by our London amateurs which was the most desirable American detective camera for them to purchase, since they could find nothing satisfactory in their market. Now on looking over the foreign papers we see several new makers advertising what they term hand cameras, patterned closely after our popular models. So all over the world the use of light, portable hand or detective cameras is spreading, and the demand for simple, effective shutters to be used in them is increasing.

I have looked through the record of photographic patents during the past ten years to see what proportion cover camera shutters. The record, briefly stated, is as follows: Total number of photographic patents issued in 1880 was 19; none on shutters. Total for 1887, 96; camera shutters, 18. Total number 1889, 112; camera shutters, 7. Total number of camera shutter patents issued in the past ten years, from 1880 to 1889, inclusive, was 59. The increase in the number of patents commences in the year 1885 and rises from 7 of that year to 10 in 1886, 18 in 1887, dropping to 7 in 1888, and 7 in 1889. The patents cover all styles of shutters and odd details of construction.



A SIMPLE DROP SHUTTER.

The soft rubber tubing is seen on the left, which operates the flat release-spring. The fine line on the right is a thin rubber band to accelerate the speed of the drop.

All shutters are propelled in three special ways, either by gravity, by spring power through an elastic band or a steel spring, or by pneumatic power through the compression of a bulb. Spring power is now most generally used.

In the case of the gravity drop shutter, secured to the front of the lens tube or working in an extra slit between the lenses, we probably have the simplest kind of shutter. When accelerated by elastic bands, the shutter may be said to be propelled by a combination of gravity and spring power. In the drop shutter additions have been made to release it by a pneumatic pump and to prevent excessive jar as it suddenly stops. Other changes permit it to be intercepted in the fall for time exposures, and still other mechanisms regulate the speed of its fall so that a set time may be given. I have a model of simple drop shutter having a very simple pneumatic release which only costs about twenty-five cents to make. The slide is vulcanized rubber, and a flat spring attached to the side of the shutter, which holds the slide in position, is simply forced outward by the expansion of a soft rubber pipe in which the air is compressed by pressure on a bulb.

THE SCOVILL DROP SHUTTER.

THE SCOVILL DROP SHUTTER.

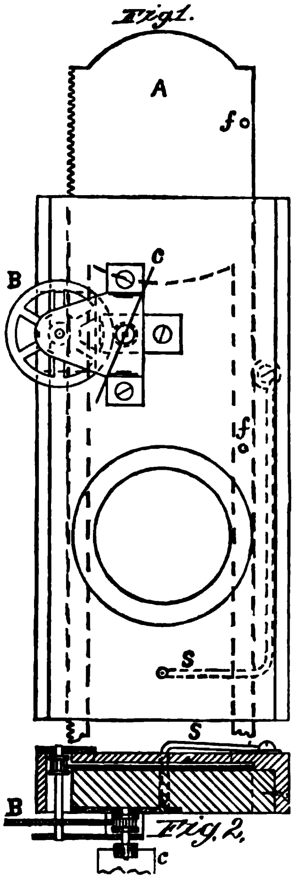
A very neat drop shutter is one made of metal sliding between the lenses just back of the diaphram slit. One such, made by the Scovill & Adams Company, I have successfully used in connection with the Morrison Lens. It was provided with a small hook at the top which caught and held the light rubber bands encircling the lens, used for increasing the speed. Being small and compact it seldom attracted attention. There is another drop shutter made by the same firm which has attached to the face of the slide a flat spring with a hook at one end, the whole projecting outward at an angle from the slide. At the top of the shutter, running transversely across, is a brass wire; when the slide is released, it suddenly drops until the aperture has passed the lens, then the flat spring impinges on the wire and by its friction in sliding, retards the motion of the slide, while the hook at the end catches the wire and stops the fall.

The projection of the spring struck me as being clumsy and liable to get bent or deranged. However, the principle is good, and is one worth putting in all drop shutters, that is, gradual retardation of the motion after the slide is released, to prevent undue jar or strain on the lens tube. Various forms of the aperture in the slides of drop shutters have been proposed. That generally employed is somewhat longer than the diameter of the lens tube, and semi-circular at each end, the convex portions of the circles being towards each other. In photographing the Flood Rock explosion, October, 1885, the government photographers used a simple drop shutter in front of the lens, having a transverse rectangular aperture not more than three-eights of an inch wide. The shutter was held in position by electric magnets.

BIRDSALL'S TIME DROP SHUTTER.

Another form of drop shutter is that devised by Mr. E. F. Birdsall, a member of our society, and shown before the society in November, 1885. One edge of the shutter slide has gear teeth which engage in small cog-wheel, it in turn rotating a fan. As the slide falls it rotates the fan, which regulates the speed. It is called a time shutter and can be made to pass by the lens front in one or two seconds. Mr. Birdsall found in photographing groups, it was advisable to set it off once, that his subjects might get accustomed to the noise. It could be released by a fine black thread.

Passing now from the simple drop we come to a combination drop and flap shutter, which some think is preferable, as the flap may act as a sky shade. In March, 1885, Dr. John H. Janeway showed before the society a fifty-cent drop and flap shutter which was quite simple and novel, being made out of a pill box, a cigar box, and having for springs to operate the flap doors, two tobacco-box springs. Mr. H. M. Grisdall has constructed a similar shutter with some improvements, as shown in Fig. 1 and Fig. 2.

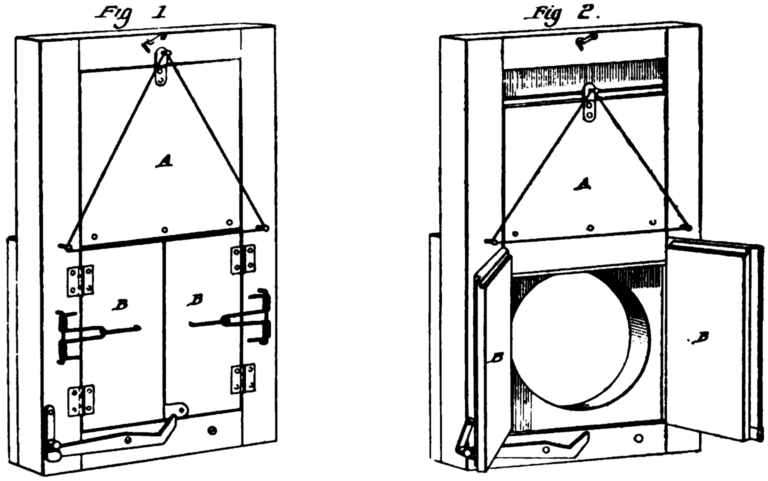


THE BIRDSALL TIME DROP SHUTTER.

Fig. 1. *A*, slide with toothed edge. *B*, pinion wheel engaging in toothed edge, which also operates fan pinion, *C*. *C* is the rotating fan, also seen in Fig. 2. *f* is stop-pin. *S* is spring wire release-spring, which engages in a hole in the lower part of the shutter. When the spring is pulled outward by a cord the shutter descends only as fast as the fan-wheel permits it. By putting on large fans it may be made to move slow. Small fans will make it go fast.

GRISDALE'S COMBINED FLAP AND DROP SHUTTER.

Fig. 1 shows the shutter in position to be released. The doors are controlled by two wire springs which pull outward. When released any jar of the door is prevented by the loop of the spring striking against the standing wire loop. The moment the trigger at the bottom is pushed upward, the doors fly open, as in Fig. 2, and the shutter at once descends. It is shown partly on its way down in Fig. 2. A small pivoted lever at the lower left-hand corner locks the release lever when the shutter is not in use. A hook at the top also secures the drop from falling accidentally. A rubber band passes over a projection on the top of the shutter and over two pins, on each side on a level with the top of the doors, assuming the shape of a triangle when set. The shutter takes up very little space, is easily carried in the pocket, and can be readily made.



GRISDALE'S COMBINED FLAP AND DROP SHUTTER.

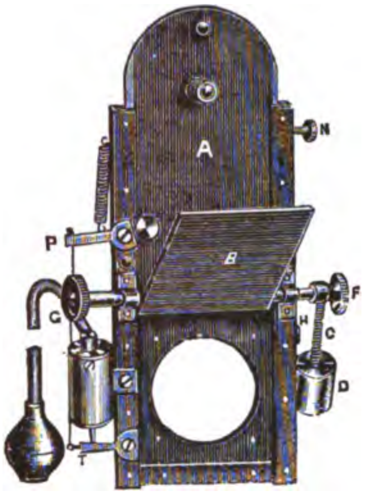
Fig. 1.—*A* is the drop. *B B* are the two doors which fly open, by the coiled wire springs on each side. The springs also answer as buffers, after the doors are opened, to prevent jar. The trigger, on the lower left-hand corner, releases the doors.

Fig. 2 shows the shutter doors *B B* open, and the drop *A* partially on its way down. The small hook at the top of the shutter holds the drop *A* when not in use. The lock lever at the lower left-hand corner is pushed to one side to allow the release trigger to operate.

THE PHŒNIX PNEUMATIC SHUTTER.

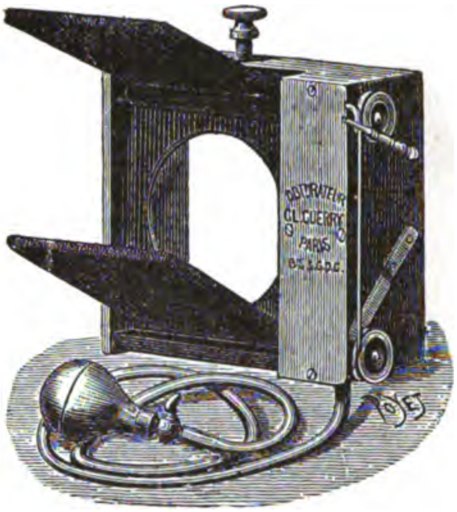
Another combination of this character is the Pneumatic Phœnix Shutter, sold by Reynolds & Branson at Leeds, England; it is arranged to have a flap fly up first as a sky shade, then the drop instantly falls, closing the opening.

A shutter having the flap idea altogether without the drop, is the Furnell shutter, shown before the society last summer by Dr. J. L. Williams. It had two flap doors. As the top one opened the lower one rotated up and shut the aperture. The idea was to keep the sky shaded and give more exposure to the foreground. By suitable means the flaps could be made to move fast or slow, the slowest allowing an exposure of five seconds.



THE PHŒNIX PNEUMATIC SHUTTER.

A is the drop shutter. *B* is fly-up flap; *C*, weight-screw; *D*, weight to operate flap; *F*, thumb-screw for setting shutter; *G*, pneumatic release, which, in pressing on *T*, releases the flap, and by connecting wire to *P*, also at the same time releases the drop, *A*.



GUERRY'S DOUBLE-FLAP SHUTTER.

Two doors operate as shown; when the top opens the lower one raises, and when just in front of the opening suddenly shuts. The movement may be made fast or slow.

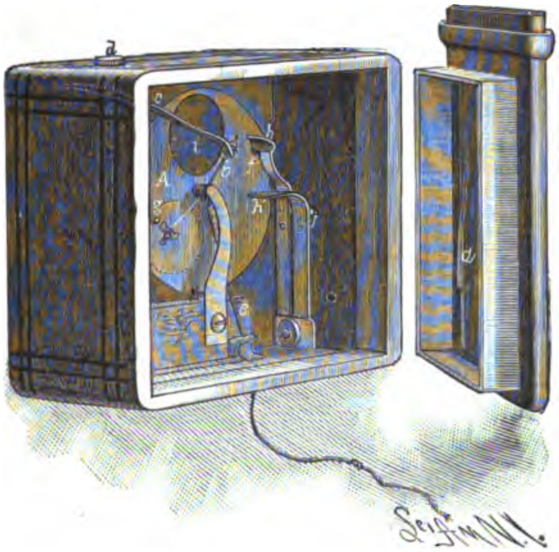
Next to the drop shutter the rotary shutter is probably the simplest. Ordinarily it consists of a simple disk rotating on an axis, located at the circumference of the lens, having either a circular, radial, or elongated aperture, the shutter passing directly across the field of the lens. Shutters of this style generally have release notches cut in their circumference and are propelled either by a coiled spring attached to the axis, or by a simple flat spring from one end of which extends a cord around a pully attached to the shutter at its axis. When the shutter is rotated to be set, the cord is wound up, causing the tension of the spring to pull and rotate the shutter when released. The well-known Waterbury and Scovill Detective Cameras employ this idea. The only drawback is that the catgut string connecting the shutter to the spring sometimes breaks. However, it has been a very popular shutter.

Another form is a self-setting rotating disk shutter employed in Nash's Detective Camera. It was propelled by a watch-spring at the axis, which, when wound up, would make the shutter rotate thirty-five times. There were three apertures in the disk, so that it only had to move one-third of a revolution for each exposure. It would make twelve exposures without any appreciable difference in speed. Akin to this is the well-known Concealed Vest Camera (see cut on opposite page), which has a circular disk with radial apertures propelled by a spring at the axis in the same way. The speed may be altered by varying the tension of the spring, but it is not generally done. The shutter is designed to run at a fixed speed.

THE GRUNOW SHUTTER.

The Grunow Shutter is very similar to the Vest Camera Shutter. It has means at the center for increasing or decreasing the tension of the spring. There is a friction device on the periphery for gradually breaking the momentum before stopping. It is very neatly made and quite simple in construction.

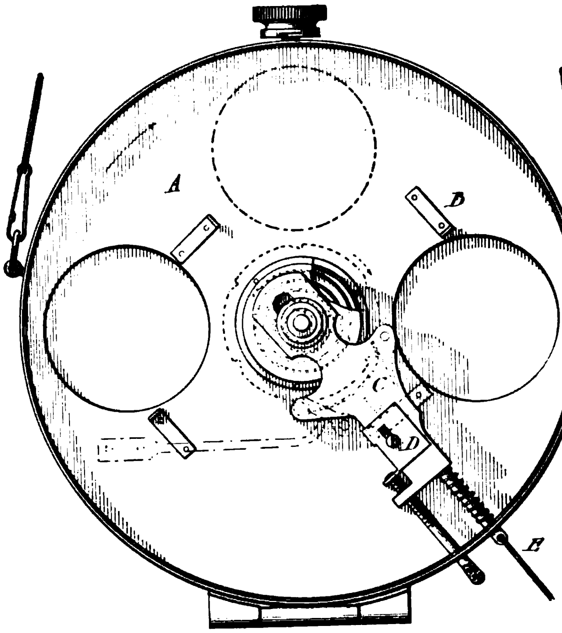
Peculiar rotating disk shutters are made by Lancaster of Birmingham, England, which are attached to the hood of the camera.



THE POCKET CAMERA ROTATING DISK SHUTTER.

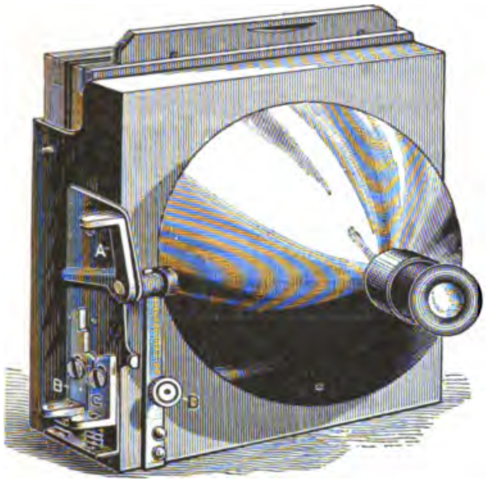
A is the shutter, around the axis of which is wound a string *b* which is secured to the spring *c*; *h* is a buffer spring to gradually stop shutter. The release trigger is operated by the string coming out of the bottom of the box; *g* is the stop-pin on the shutter that engages in the spring *h*.

Other rotating shutters are in the form of half hemispheres, or cylinders, as for example, the shutter in the Tom Thumb Camera (see cut, page 48). Here the speed is regulated by a flat spring friction, bearing on the axis. The actuating spring is on the axis.



The Vest Camera Shutter.

The shutter *A* is a circular disk having two circular apertures. The dotted-lined circle is where the lens is located. The shutter moves continuously in one direction, and is propelled by a spiral spring under a cap seen near the center in dotted lines. A part of the cap is broken away which shows the spring. Behind the shutter is the plate compartment, and the notched disk for revolving the plate may be seen in dotted lines. A spring pawl engages in these notches and holds the propelling spiral spring. Each section of a revolution winds up the spring that much. There are four projecting stops like *B* rivited to the face of the shutter. One set is designed for tripping the shutter for time exposures, the other for instantaneous. The instantaneous set strike against the downward projecting lug on the under side of the release trigger *C* as shown in a small dotted rectangular line near the letter. Before the projection on the shutter strikes lug *C* it passes a spring pawl seen in dotted lines under the release trigger to the right of the letter *C*. The pawl is kept in position by a light spring shown in dotted lines just above the letter *C*. The object is to prevent the rebound of the shutter after it strikes the stop under *C*. Carried on the face of the release trigger is a sliding plate *D* moved up or down by a screw as shown. The plate has a downward projecting lug, and is intended to widen or shorten the second downward projecting lug on the left-hand edge of the release trigger. When the plate is drawn down it widens the lug, and when the release is operated causes the time exposure stop *B*, which is nearer the circumference than the other stops, to strike it, holding shutter open for time exposure. The moment the release is let go the spring pushes it up in the position shown and allows the shutter to close. The release plate is pulled downward by the string *E*, and is guided by the slotted end passing over the central axis of the shutter and the rod passing through the outside of the shutter case connected to string *E*. The front of the camera is removed. The top screw is a cam for locking the plate cover or back portion of the camera. The two hooks shown on each side are secured to a string which passes around the neck of the wearer.

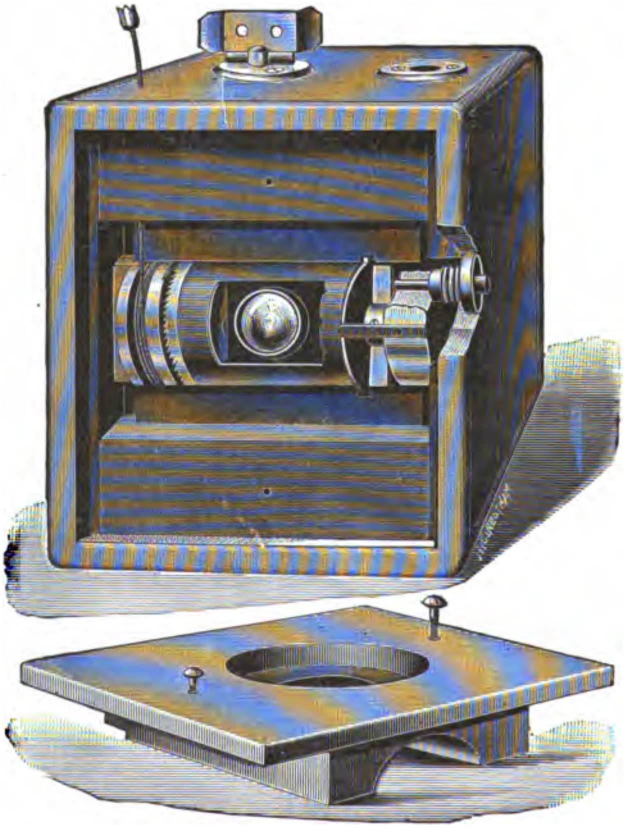


THE TOM THUMB CAMERA SHUTTER.

THE KODAK SHUTTER.

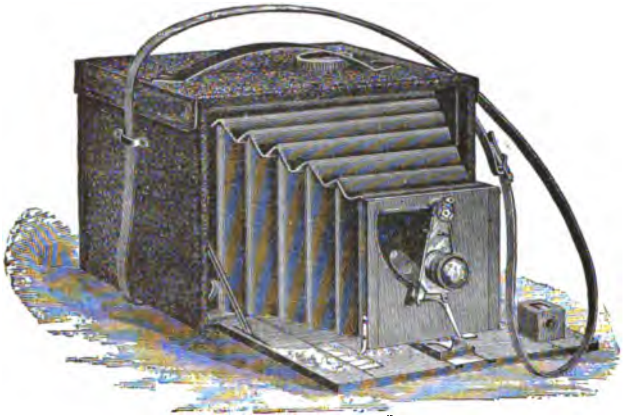
The Kodak Camera Shutter is another style having two apertures diametrically opposite each other in a cylinder, rotating around the lens. It is self-setting.

Another peculiar shutter similar in type, is the half revolution of the lens and release of a rotating disk simultaneously as shown in the Clark Camera. This was afterwards improved by having a drum-shaped shutter placed behind the lens and in front of the plate operating on a vertical axis. In one position it held a mirror which reflected upward upon the horizontal ground glass the image non-reversed and the full size of the intended picture. Releasing the shutter, it rotated horizontally, carrying with it the mirror, causing a vertical slit to pass behind the lens, thereby allowing the image to strike the plate. Such in brief is the general construction but the idea was to enable one to see the image full size and to focus it, up to the very moment of exposure.

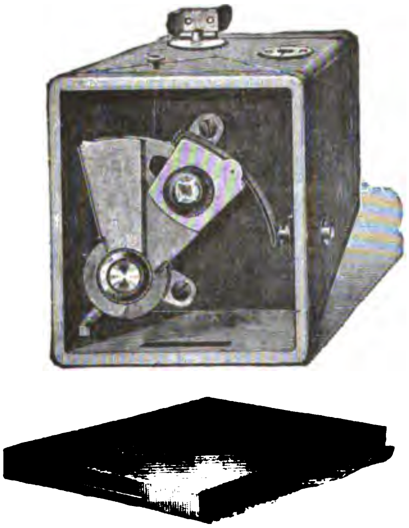


THE KODAK SHUTTER.

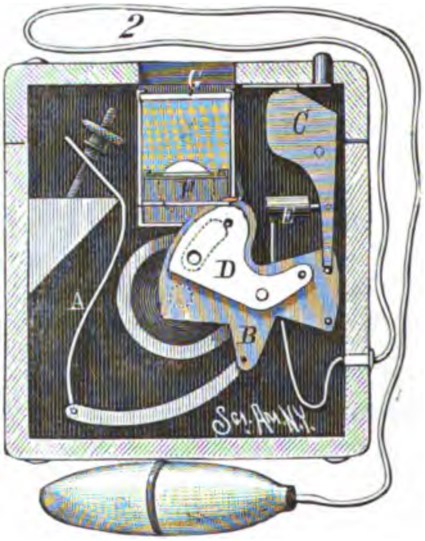
Following rotary shutters we have those sector and radial in shape sometimes in front of and sometimes between the lenses, pivoted at the apex of the angle and provided with radial apertures, having the propelling spring at the axes, as in the new number 5 (5 x 7) Kodak Camera. In this shutter there is a supplementary slide, to protect the lens while the shutter is being set.



No. 5 (5 x 7) FOLDING KODAK, OPENED



THE NO. 3 (4 x 5) KODAK SHUTTER.

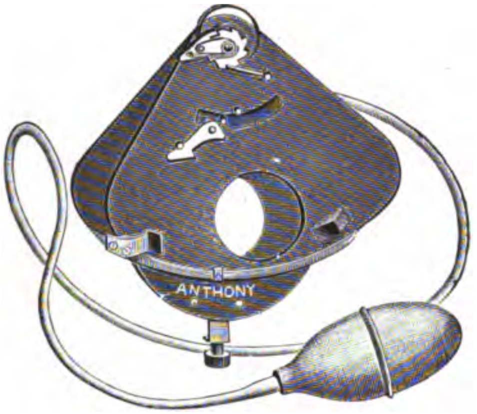


PARSELL CAMERA SHUTTER.

B is the shutter located between the lenses, connected by a link passing under the lens to the flat spring, *A*. Pressure on the trigger, *C*, releases shutter and allows the spring to push it upwards. *D* is a pivoted diaphram plate; *E* is a pneumatic release.

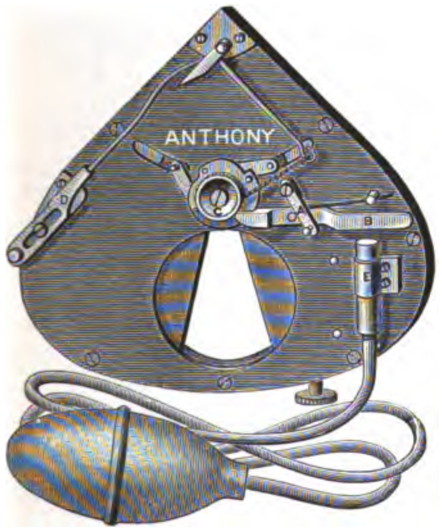
THE NONPAREIL SHUTTER.

This is a single shutter put over the hood of the lens, made in the shape of the sector of a circle. It operates like a pendulum, having the spring at the apex, with means for regulating the tension. It is released by pneumatic pump or by the usual spring release. In the position shown it is set for instantaneous exposure. By turning up the small hook horizontally (shown in the front of the shutter), it can be set for time exposures.



THE NONPAREIL SHUTTER.

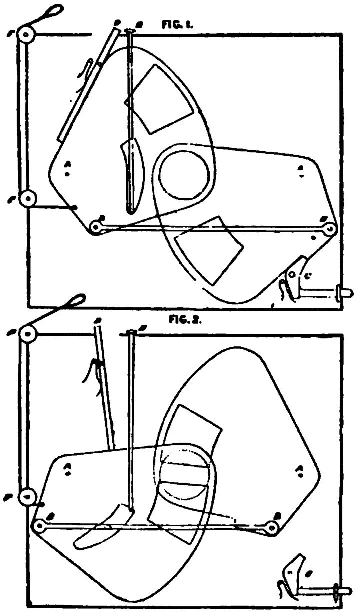
THE HADDON SHUTTER.



THE HADDON SHUTTER.

This shutter has two pivoted leaves having radical apertures which pass each other in opposite directions. Motion is imparted to the disk or pulley, *C*, to which the leaves are connected by links, by a pivoted wire spring, the same being connected to the pulley by a cord. Tension is given to the spring by pulling down the slotted plate on the left. The moving of the lever, *A*, to the left, fixes it for a time exposure. As shown to the right, it is set for an instantaneous exposure. *B* is the release trigger and *E* the pneumatic pump. The shutter sets on the hood of the lens, but can be arranged to operate between them.

WINTRINGHAM'S QUICK SHUTTER.



WINTRINGHAM'S QUICK SHUTTER.

This shutter was devised by Mr. Wintringham to make very rapid exposures. It is in a neat case and may be placed behind or in front of the lens. From the description given in the *Photographic Times Annual*, 1889, I make the following extracts: "Fig. 1 shows the shutter set, ready for making an exposure. Fig. 2 shows it immediately after the exposure has been made. Two disks of hard rubber $\frac{1}{33}$ of an inch in thickness are pivoted at the points *A*, *A*, connected at opposite sides of their respective centers by the bar *BB*, are operated by an elastic band stretched from the string running over the pulleys *FF*.

"The bar pivoted *D* follows the left-hand shutter, moving from the position which it occupies in Fig. 1 to its position in Fig. 2, and prevents any rebound; a fault in most all quick-acting shutters. The rod *E* having a hooked end at the bottom projecting through the slot cut in the shutter, is simply used to set the shutter. Pulling it upward raises the shutter as in Fig. 1. Before this can be done the rebound bar *D* has to be pushed slightly to one side. When the shutter is raised the release trigger *C* catches and holds it ready for the next exposure. A light spring pressing against the rebound bar *D* causes it to follow the shutter as soon as released.

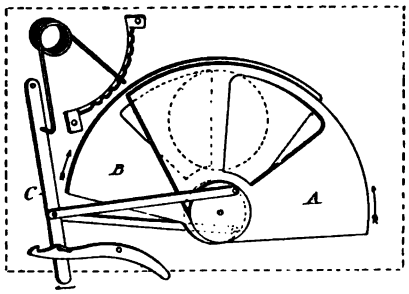
"Normally if the string to which the rubber band is attached is stretched so its loop will pass over and catch upon the knob on rod *E*, as high a speed will be given as is ordinarily needed. By having other pugs to the left a lower speed may be given. The overlap on each slide is considerable, in order that they may acquire a good velocity before the apertures coincide before the lens."

It will be noticed that Mr. Wintringham has adopted the idea of imparting a small movement to the shutter-leaves near their pivot to obtain rapid movement of the aperture section. He has done some excellent work with this simple mechanism.

GRISDALE'S DOUBLE SECTOR BLADE SHUTTER.

The sketch shows two sector shaped blades of thin hard rubber pivoted loosely on one axis. On the outer face of each at the pivot, secured by rivets, is a thin circular metal disk about three-fourths of an inch in diameter.

Each blade has rather long apertures cut to allow a full exposure of the lens when they pass each other. Extending from opposite points to the same center on each metal disk to one side and connected with a pivoted lever are two rods. The slow movement of the lever in one direction causes the rapid movement of each shutter blade in opposite directions, as will readily be seen in the sketch. The lever is propelled by a spring whose tension is easily decreased or increased, as shown. A pivoted release trigger is at the bottom. The dotted line shows the outline of the camera box. The shutter is intended to be secured in front of the lens. It is very easily made, is simple and certain in its working. By suitable means it can be held open for focusing or for time exposures.



GRISDALE'S SHUTTER.

The dotted line represents the outline of the detective camera box. *A* and *B* are the two shutter blades, sector shaped, moving in opposite directions, whose apertures coincide when opposite the lens. Pivoted on opposite sides of their respective centers are two rods, connected to a single pivoted lever, *C*. This is propelled by a spring as shown, whose tension is readily increased or decreased, for rapid or slow work. The released trigger is at the bottom. When pressed up the lever *C* flys outward and the shutters move in the direction of the arrows.

(*To be continued.*)

◆

Club Sketches.

THE CINCINNATI CAMERA CLUB.

THE Cincinnati Camera Club is a striking illustration of the widespread interest that within a few years past has been taken in all that pertains to out-of-door photography. In January, 1884, the club was organized with but twenty-one members. From this modest beginning, the growth of the club has been regular, healthy, and permanent, so that now nearly one hundred and fifty names are on the membership roll, or an average annual increase of about the number started with. Unlike most of the photographic societies of the country, the membership is confined exclusively to those who do not earn their living with a camera. In many of the clubs, professional photographers are found, but as yet no provision has been made in the constitution of the Cincinnati Camera Club for their admission.

A great variety of interests is represented in the club patrons, and mechanics and millionaires, university professors and retired merchants, artists and architects, engineers and chemists, journalists and publishers, manufacturers and stock dealers, bankers and underwriters, lawyers and doctors are all found among the active workers. The above enumeration does not include the ladies, of whom there are ten and who, in the character of work done, rank along with the best photographers in the club.

THE RECEPTION ROOM.

At first, a small third story back room answered every purpose for the club's meeting place and headquarters, but with an increased membership came a demand for more comfortable accommodations and better facilities for dark-room work. About four years ago, permission was given by the Cincinnati Society of Natural History to the club to form a Section in Photography, and what had been previously known as the Cincinnati Camera Club then became the Photographic Section of the Cincinnati Society of Natural History, though the original name has been retained for the purposes of the club literature, and the club is still known among photographic societies as the Cincinnati Camera Club.

The club in its present location has fitted up expensive dark-rooms, of which it has two, with every appliance convenient for, or necessary to the prosecution of photographic work, and a handsome reading-room and library, the latter stocked with all the leading journals and publications of the day. For its meetings, the club has the use of a large lecture room belonging to the Society of Natural History, and which the club has equipped with a permanent roller screen eight feet square, and a stand for its gas cylinders and fourth-range, single, Gregg lantern. The advantages of a lantern always ready for use, with only a moment's adjustment necessary, and a screen put into place as easily as a window shade is raised or lowered, are so obvious as not to call for special comment.

The regular meetings of the club are held on the first and third Monday nights of each month, and an annual meeting, at which reports of committees are heard and officers for the ensuing year elected, is held on the first Monday night of April in each year. All business coming before the club is transacted at the first meeting night in each month, while the second is less formal and more social in its nature.

THE CLUB LECTURE ROOM.
[When the screen is used for lantern-slide exhibitions, the gas fixture directly in front is drawn up to the ceiling.]

During the time each winter when the Interchange Lantern Slides are on the circuit, the second meeting of each month is largely given up to them. After the Interchange slides have been shown, members are invited to submit slides of their own, either for testing them or for the purposes of having them criticised, a privilege that is frequently taken advantage of to the mutual benefit of club and exhibitor.

Two features may be said to have grown into and become a part of the regular work of the Cincinnati Camera Club. One is the annual excursion which occurs on Decoration Day. Each year since the club was organized, its members have joined in a day's outing, and no more profitable meeting of the club is held than this one, where for the time being all the members are on equal terms so far as existing photographic conditions are concerned.

It was upon returning from the first of these excursions on May 30, 1884, while a number of the members were discussing the subject of a change in the club name, that the term "Camera Club" was suggested as an appropriate title for an association of photographers.

At the next meeting of the club it adopted the name "The Cincinnati Camera Club," and was the first society, so far as we are aware, in this country or abroad, to adopted a name which has since come to be regarded as common property in a majority of the photographic societies which have been recently organized.

New inspiration and enthusiasm for the work come with each successive excursion, and the club's membership list is sure to be augmented as the day for the "outing" approaches.

Another feature which has marked the Cincinnati Club's work has been a public exhibition once a year of a series of lantern slides made from the negatives of its members. Within three months after the club's organization in 1884, the first of these exhibitions was given, and the following year the club sent an exchange of slides to the New York Society of Amateur Photographers which was the beginning of what has since become "The American Lantern Slide Interchange."

THE DARK ROOM.

It is not too much to say that The American Lantern Slide Interchange owes its origin and development largely to the energy and earnestness of the representatives of the Cincinnati Club who conceived the idea of the interchange, and labored unceasingly until the organization was squarely on its feet. These annual club exhibitions have done more to increase the club membership than all other agencies combined. The aim has always been to make them thoroughly popular and representative of the club's work, and every member has been encouraged to undertake the making of lantern slides and to furnish at least a single specimen of his work for public exhibition purposes.

How well this has succeeded is best seen in the last exhibition given on March 9, 1889, when one hundred and twenty-four slides were shown that had been contributed by thirty-three members, no one person furnishing more than nine slides.

Each year some novel effect is introduced and variety is thus given the entertainment. The audiences, aside from the members of the club, are present by invitation only, and so popular have these exhibitions become that they are looked forward to with as much interest as any social event of the season.

Careful and scientific projection on a perfectly opaque surface with the largest sized objectives, has brought a degree of satisfaction to the lovers of lantern slides which is entirely beyond the reach of the ordinary traveling lecturer with his tilted lantern, and loosely suspended sheet of muslin, called a screen.

The club's management is vested in six committees who have charge respectively of the annual excursion, an annual exhibition of prints, the club album, the annual lantern exhibition, slides for the interchange, and a programme for each regular meeting.

The rooms of the club, at No. 108 Broadway, are always open, and visiting photographers, whether members of other societies or not, are always welcome at the club meetings, and are invited to avail themselves of the club's reading and dark-rooms whenever they are in the city.

During the past year the club has taken pleasure in entertaining a number of distinguished devotees of the black art, among whom were Mr. W. H. Walmsley, Prof. Edward Muybridge, and Professor and Madame LePlongeon. The club is a happy refuge from business and professional cares, and occupies a not unimportant place in the affections of its members. The present officers of the club are: President, George Bullock; Vice-President, William Hubbell Fisher; Recording Secretary, Emery H. Barton; Corresponding Secretary, H. C. Fithian; Treasurer, Aaron Prince; Librarian, Arch. I. Carson. Soon after the club moved into its new quarters we had the pleasure of inspecting the rooms, which we found very conveniently located on the first floor of the building and equipped with every appliance needful to the amateur. The club-room or reading-room is very nicely furnished and has an attractive mantel-piece over a grate fire shown in our illustration. The illustrations are made from Mr. A. Denniston Smith's negatives, a member of the club.

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Photography as an Aid to Artists.

BY F. A. HETHERINGTON.

THERE is something about photographs made by a person possessed of regular art training, that gives to them an artistic value, and this fact is so evident and prevailing that it has forced itself directly against the well-known prejudice of artists so strongly that there are now but few painters and illustrators, even of the highest rank, that do not recognize it. There is no question but that the camera is now used to a very large extent as an assistant by many of them, and no apology is considered necessary.

Many of our best American artists use the camera with great effect, but if one will take note of it, he will find that he can readily pick out those illustrations in the making of which the camera lent its aid, for there are certain ear-marks that one who is familiar with the usual art school course of an artist's training can always detect.

Now who shall say that it is not permissible to adapt the camera to artistic needs? Even artists who a few years ago had strong arguments to offer against this innovation do not now maintain that position so strongly, for many able men use the camera to a large extent in illustrative work. To use the camera properly for artistic ends a man must be an artist, and one who is not, cannot produce interesting results. The artist cares nothing for the photograph as a photograph; he aims beyond that, and, to a certain extent, gets many artistic qualities in his work; not qualities of photographic excellence, to be sure, but expressions of sentiment, which come from his happy intuitive faculty of arrangement, commonly called composition.

No collection of amateur work is so interesting, to one who understands it, as that to be found scattered through the portfolio of a clever artist. It is generally very bad technically, either under or over-exposed, and more or less carelessly printed on odds and ends of paper, bromide and platinum prints prevailing, but every print will have an indescribable charm; much the same as that which is inherent in a slight, clever sketch made with pencil or brush. It is this subtile quality that at once marks the artist, and is part of himself. There are no rules governing it, and no one can impart to another the secret of its existence.

But, to come back to the main issue, from which I have wandered, if an artist conceives his picture in his mind's eye in its entirety, why should he not use the camera as an instrument or means to realize the end in view? To fix permanently evanescent bits of action or expression which are so fleeting that the memory can but weakly hold them? The argument that would be advanced against this proposition is that a tendency is developed in the artist to lean overmuch upon the photograph, to become careless of observation and lax in the discipline in the eye of drawing. There is a very solid foundation for such an argument, and I believe that every trained artist has a secret feeling that this is true. The admission of this is an admission of weakness, but at the same time the weakness is one common to all human nature. It is so much easier to lean upon something than to stand alone. Nevertheless, the camera is destined to cut an important figure in all illustrated work of the future, and I believe that its effect will be to generally improve the character of such work, in that it will lie closer to nature, and, although the use of the camera may be disastrous to some of the weaker illustrators, I do not think it will hamper the ability of the better ones who use it subjectively.

There are a great many sides to the question whether photography should or should not be recognized more heartily by the artistic fraternity. As a medium of reproduction it is known to most of them in its simplest form only, yet some of its highest branches should appeal to them strongly. Take for instance the beautiful process of Albert, for reproductive work. This process is now known more or less generally as the photo-gelatine process, and is often erroneously termed photo-gravure. There are many now in the trade who make a specialty of some modification or another of this old process for the reproduction of works of art, and most of these people jealously guard their particular process as a close secret. If the facts were known, however, it would be seen that they are all working the same old process, differing from one another in detail only. Modern advances in chemistry and mechanics have reduced this method of reproduction to a very simple basis, and there is no reason why the artist should not use it personally, and thus place his work directly before the public without the intervention of the publisher, in the same manner as he now sends forth prints from his etchings. Artists' clubs could by this means issue charming reproductions of their work, and they would have the merit of being autographic. Divested of the mystery and secrecy with which the publisher surrounds his methods, this process is simple and inexpensive. If one will take the trouble to make his own plates he can get the best of results with a remarkably cheap outfit aside from his camera. If the negative be made from the drawing by a professional photographer, matters are simple indeed, and the printing is easier than the printing from copper plates, by long odds. I have noticed that most artists of ability have a large amount of natural mechanical faculty, and *vice versa*, that men eminent in constructive mechanics generally have natural, though untrained, artistic faculty. Possibly there is an analogy between these widely separated pursuits, in that they each require the existence of the creative genius. Therefore, I am led to believe that an artist could handle the mechanical part of this business with eminent success, and further believe that he would find it a beneficial relaxation from other work, or idleness, as the case may be. Whether he would be financially repaid for this labor is another matter. The American people are appreciative of successful effort, and the fact that certain publishers have made fortunes in this direction would indicate that a numerous public would be quick to purchase autographic collections of reproductions coming direct from the artist's hands, and pay liberally for them.

There are other branches of photography that should recommend themselves to the artist. If he cares to go deeper into process work he will find an interesting field for effort in photo-gravure proper. This is a copper-plate and etching process, and, in the hands of an artist is capable of wonderful results. At present, most of the American photo-gravure productions are harsh and crude, but I am convinced that this is because those who attempt the work are possessed more of the mechanical than the artistic faculty. Gradually the artist is drawing into closer communion with the public, and the result is advantageous to both. A comparatively small amount of the wood-engraver's interpretive trade or art is now seen in our illustrated periodicals. In this respect photographic processes have been a boon to both artist and public, and no one can say that the public has not been appreciative. Why, then, should not the artist make use of some of these higher processes to give to the public limited editions of reproductions of his work? Such reproductions would not, of course, rank with the line etching, yet they would form a welcome addition to the portfolio of any collector.

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EDITORIAL COMMENT.

Last November, in an informal address before the Cincinnati Natural History Society, Mr. George Bullock, President of the Cincinnati Camera Club, spoke of the remarkable aid photography gave to the illustration of natural subjects. Since its discovery it had been one of the best educators ever introduced, for by it not only the finest works of art have been reproduced, but also the grander works of nature. The use of the lantern and lantern slides were a great aid to the lecturer on Natural History subjects, since by them people are educated by the eye as well as the ear. There is no doubt when both means are used the education is more easily imparted.

It is not surprising that the lantern should be very extensively used for purposes of illustrations, when lantern slides are so easily and certainly made as they are at the present day, with the use of the new developers. It is a much easier matter for an amateur to make a set of negatives of a given subject and from them produce creditable lantern slides, than to make silver prints from the same. The winter months are particularly useful for lantern work.

Mr. H. G. Thompson, lately manager of the Blair Camera Company's Chicago house, writes us that he is prepared to make an engagement with parties looking for a competent manager. He has been many years in the business and thoroughly understands the business in all its branches. He writes us further that Chicago is a good place to invest money in the photo-supply business.

Two-Solution Development.—One of the best methods of development is to mix two solutions, one strong in pyro and bromide, and weak in alkali; the other weak in pyro and bromide, but strong in alkali. The plate is placed in the latter developer first. With a correct exposure the image will appear rapidly, and gradually acquire general density. If the image flashes up at once it is a sign of over-exposure, and the plate should be immediately transferred to the first developer to gain density.

Saturated Solutions in Cold Weather.—We strongly deprecate the use of saturated solutions on account of their variability with the temperature. A saturated solution made up in warm weather will show a considerable deposit in cold weather, a state of things which makes anything like scientific accuracy impossible.

Bichromate Intensification.—Mr. J. Werge recommends staining a weak negative a ruddy color by immersing it in a solution of bichromate of potash, which stains the plate all over and gives neither fog nor local obscuration. We have often intensified negatives in a solution of yellow aniline with uniformly good results. If a deeper tinge is desired than is at first obtained it is an easy matter to increase the strength of the solutions. The same result is obtained by fixing and washing a number of light-struck plates and then staining them of different intensities. These screens are to be placed over the negative after it is in the printing frame.

"I stood upon the wave-girt strand,
And, in thoughtful mood,
I drew upon the yielding sand
The face of her I wooed.
The wind-tossed waves swept past,
The face was gone forever:
"False waves," I cried, "oh, cruel blast,
Again I trust you never.
I will a "Montauk" camera get,
And with some "Eagle" plates in store,
I'll wait and watch, with shutter set,
To get a picture of my pet,
That I may keep forevermore."

—*Photographic Scrap (slightly altered).*

Specialists in Photography.—We believe that the time has come when our leading amateurs should select some special department of photography for exhaustive study for the benefit of the fraternity. More good would be accomplished by this division of labor and concentration of energy than is possible under our present methods. Several fascinating applications of the art remain unexploited simply because no one has thought or cared to investigate them. The societies have done something in this direction but there is much left to attract and reward the painstaking investigator.

Slow vs. Rapid Plates for Landscape Work.—We have always been a believer in the superiority of slow plates for the general run of landscape work, and we have been in the habit of using the slowest plate we could obtain for that purpose. Wishing to give the matter a thorough test we have recently made series of exposures on the same subjects using a rapid plate with which we were well acquainted, Carbutt's "B" plates and films coated with a slow transparency emulsion. The comparative sensitiveness of the films were tested in a sensitometer and the exposures made to correspond. Each plate was in turn exposed on the same subject, and in every case the results after development, fixing and printing were in favor of the slowest plates, which, besides being more easily developed, gave more brilliant prints.

Index to Vol. I.—By mistake a number of copies of the January number were sent out without the index to Vol. I. If those who failed to receive the index will kindly notify us we shall be pleased to supply the omission.

Mr. J. J. Blakely, of Newport, R. I., sends a print of a hunting lodge from a negative made by moonlight. Time of exposure, three hours, Cramer plate. The print shows a fair amount of detail and presents a feature which Mr. Blakely asks to have explained, viz., an irregular white line across the front and one end of the building, looking, as Mr. Blakely writes, as if something had crawled along under the piazza and back of the posts which support it, stopping occasionally, crossing its own track several times. The only explanation we can give of the singular appearance is that a person carrying a lantern had walked up and down the piazza while the lens was open. We shall take an early opportunity of testing the correctness of our theory.

Abney's Mercury and Silver Intensifier.—The following is the formula for what Captain Abney calls "the best intensifier":

A—Bichloride of mercury,	100 grains.
Bromide of potassium,	100 grains.
Water,	10 ounces.
B—Nitrate of silver,	100 grains.
Water,	10 ounces.

To this last is added a 100-grain solution of cyanide of potassium till the precipitate first formed is nearly all re-dissolved. The well-washed plate is immersed in solution A till bleached. It is then well washed and immersed in solution B till it is blackened completely through the film and again thoroughly washed.

The Eastman Dry Plate & Film Company has sold all its business rights and good-will to the Eastman Company. The new company is capitalized at $1,000,000, and will devote all its energies to the manufacture of the reliable line of goods which has made the name of Eastman famous. The officers of the company are the same as under the old regime.

Hydroquinone Developer for Bromide Paper.—Mr. E. J. Doherty recommends the following:

Carbonate of soda, ...	55 grains.
Sulphite of soda, ...	35 grains.
Hydroquinone, ...	4 grains.
Water, ...	1 ounce.

One ounce of this with two ounces of water forms the developer.

Toning Baths.—Some exceptions having been taken to the formula for a toning bath given in the December number we have taken pains to verify the statements there made. As the result of our experiments we would advise that the amount of salt be increased to six grains to the ounce of water. The amount originally given, two grains, is hardly sufficient for the purpose, although several of our readers have written us that the method recommended had helped over a difficult place in their photographic work. We are well aware that other methods give equally good results. We did not give the method in question as the only possible one, but simply as that by which one professional obtained uniformly satisfactory results. We are pleased to know that the members of the Photographic Section of the American Institute considered the matter worthy of mention at a recent meeting, and we may add that our own silvering bath is that recommended by Mr. Newton, forty grains of silver and an equal amount of nitrate of ammonia to the ounce of water. Some interesting remarks on this same subject will be found in the report of the Photographic Section of the Institute.

Photography is now talked about so much in the daily and weekly press that a correspondent suggests the idea of keeping a photographic scrap-book, in which one may preserve all the articles found published on the subject. It is an excellent practice, and we commend it to all interested readers. Says our correspondent: "One meets with articles on our pet subject almost daily, in the newspapers, journals, and magazines. I commenced a photographic scrap-book about a year ago; it is nearly full and Vol. II. will soon be started."

An excellent rule for photographic societies and clubs to establish, would be that all new members should supply a photograph of themselves with their autograph, which should be kept in the club album. Thus a photographic record of membership would be kept which in time would become quite interesting and valuable. An attempt of this kind was made some time ago by the New York Society of Amateur Photographers, but was never followed up by the officers, so that only a few photographs were obtained.

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

Brooklyn Society of Amateur Photographers.—The annual election of officers was held Thursday, January 2d. The newly elected officers are the following: President, C. M. Trowbride; Vice-President, H. Ladd; Treasurer, M. Forman; Secretary, H. P. Sewall. An informal reception and exhibition was held at the rooms of the society, No. 412 Jay Street, December 28th, which was very successful and enjoyable.

New York Camera Club.—At the annual meeting held Wednesday, January 8th, the following officers were elected: President, David Williams; Secretary, H. T. Duffield; Treasurer, Dr. Robert J. Devlin; Executive Committee, Dr. H. G. Piffard, W. Townsend Colbron, and W. J. Cassard. Changes were made in the by-laws, fixing the annual dues at $25.00, and allowing members of other incorporated photographic societies to join the club without the payment of the initiation fee.

On January 15th Professor Romeyn Hitchcock, of the Smithsonian Institution, gave an interesting lecture on Japan, illustrating it with lantern-slide views.

Niagara Camera Club.—This new club was organized December 30th, and the following officers were elected: President, Rev. J. W. Sanborn; Vice-President, Wm. H. Case; Secretary, Lewis Holmes; Treasurer, Charles N. Van Valkenburgh. A committee of three was appointed to draft a constitution and a code of by-laws and report at the next meeting.

Marlboro Camera Club.—At the annual meeting held Tuesday evening, January 7th, the following list of officers was elected for the coming season: President, H. C. Russell; Vice-President, Alfred M. Howe; Secretary, Geo. L. Stevens; Treasurer, Dr. O. H. Stevens; Librarian, J. F. J. Otterson. Various reports were read showing the club to be in a prosperous condition. The evening was closed with the exhibition of slides from Dr. Stevens's fine collection. A member of the club, Mr. J. M. Edwards, was recently awarded the first prize for flash-light groups in the competitive exhibition of C. E. Hopkins, Brooklyn. Although Mr. Edwards is over seventy years old he is as enthusiastic as any of the younger members. The preparation of a club album of Marlboro views is in contemplation.

Detroit Amateur Photographic Society.—We have received an invitation to the opening of the new rooms at 42 State Street, on January 14th. The invitation is neatly gotten up and reflects credit on the society. The opening exercises consisted of an address of welcome and an exhibition of lantern slides. The officers are: President, James Joy; Vice-President, H. L. Wilton; Secretary, J. E. Lockwood; Treasurer, D. Farrand Henry.

Schuylkill Camera Club.—The regular monthly meeting was held Thursday evening, January 9th. It was decided that the club's first annual exhibition take the form of a lantern-slide exhibition, and that the members be requested to prepare slides for that purpose. Both slides and negatives must be the work of the members presenting the slides. The secretary reported a membership of forty-four—forty-two active and two honorary.

Brookline Camera Club.—At the first regular meeting of the club in the new year the election of officers took place, which resulted as follows: President, H. R. Hallett; Vice-President, E. E. Truette; Secretary, Miss Mabelle Armstrong; Treasurer, Sumner Foster. The above, with Mr. H. H. Robinson and Miss Helen Richards, constitute the Executive Committee. The club is growing very rapidly, admitting several new members at each meeting, and promises well. A set of lantern slides is to be made to enable the club to join the exchange, and an exhibition of the work of the members is looked for at an early date.

Photographic Section of the American Institute.—Criticism of American Photographic Literature.—Silver Printing Baths, and Toning Solution.—At the last informal meeting (December 18th) of the Photographic Section of the American Institute, it was proposed by the executive committee to spend a portion of time at each informal meeting of the Section in reviewing photographic literature, or such portions of it as might be suggested by any of the members. By this means many valuable books might be brought to the front that were now lying idle on the shelves of the book-seller or in the libraries of photographic societies. Or in other words, it might serve as a means to stimulate a disposition to become more familiar with the literature of the art. It might give, too, an opportunity to those who ignore the value of books, to state definitely in what their objections consisted.

The chairman of the committee said: "It is taken for granted that all those who are in the habit of attending these informal meetings are interested more or less in the literature of this art science, and use it as a means, both of recreation and instruction. We have all, no doubt, in thus occupying a portion of our leisure time, met with articles or formulas worthy the attention of every student of photography. We have also sometimes met with formulas quite different from those we have been in the habit of using and therefore inclined to believe them useless. This belief, however, has often been modified by consulting with others who have had a wider experience, so that what we once regarded as false, we are now able to demonstrate as true. Now I propose, instead of condemning a writer simply because he does not confirm our theories and belief, to call attention to such variation of opinion in order to obtain not the experience of one, but of many; and thus learn, perhaps, a variety of ways by which the same object may be accomplished. I brought with me, to-night, a single number of *Anthony's Bulletin* and the AMERICAN AMATEUR PHOTOGRAPHER, both of which journals are worthy of great praise, and in which are often to be found some single formula or item of information far more valuable to the practical or amateur photographer than a year's subscription to both these journals. But in both these excellent periodicals we may occasionally meet with statements that do not tally with our experience. For example, in the last named journal, page 176, where a formula for printing and toning albumen paper, the writer says: "Use one grain of gold for each half sheet of paper; bicarbonate of soda, ten grains; and salt twenty grains. The above, are dissolved in ten ounces of water; the salt being introduced to properly bleach the deeply printed proofs." Now this formula may be all right and yet it differs widely from my mode of making toning baths. I have found one grain of gold sufficient to tone a sheet of paper, but never two grains of salt in each ounce of water sufficient to bleach deeply printed proofs. One of the best formulas I have ever used is to dissolve in every four ounces of water sixty grains of borax and one grain of chloride of gold. After the prints are toned and fixed, soak them in a strong solution of salt and water, not for the purpose of bleaching them but to prevent their blistering. If they remain in this solution too short a time, or the solution is too weak, they will sometimes blister in spite of the salt. A good plan is to add slowly the washing water to the salt solution until the last trace of salt has been removed. By taking this precaution I have invariably avoided blistering the prints.

Prof. P. C. Duchochois said: "I believe two grains of salt in each ounce of toning solution of not much use as a bleaching agent, and although the tenth of a grain of gold might be sufficient to tone, if the solution is hot, I should certainly prefer a much stronger bath."

Messrs. Newton and Faris also favored the use of a strong toning solution and a 40-grain bath for silvering the paper rather than 60-grain, as recommended in the article under consideration.

Mr. Newton said: "I have made unexceptionally good points with only a 10-grain silver solution, by simply adding nitrate of magnesia and nitrate of ammonia sufficient to keep the albumen from dissolving in the bath."

The hour for closing (viz., 10 o'clock P.M.) being announced, further talk on the subject of printing was postponed to some future occasion, and the chairman declared the meeting adjourned.

An interesting informal meeting was held January 15th, Vice-President J. B. Gardner in the chair. In opening the meeting the chairman spoke of the helpful influence exerted by the informal meetings of the Section at which the utmost freedom of discussion was welcomed. The subject of photographic literature was touched upon and the suggestion was made that it might be well to review some of the more important photographic books and journals at these meetings approving the good, and censuring the bad. Other societies might join in the work, and by calling attention to the strong and the weak points in leading photographic journals much good would undoubtedly result. After some discussion on the subject, the toning of aristotype prints was brought up. Mr. Cornelius Van Brunt stated that he had had good success in toning these prints with a solution containing eight ounces of hyposulphite of soda dissolved in thirty ounces of water, and to this is added fifteen grains of chloride of gold, dissolved in one ounce of water. To the above compound is added seventy-five grains of nitrate of lead, and two ounces of a saturated solution of alum. Mr. Duchochois objected to this method from a chemical point of view, and sustained his objection by giving the chemical changes which take place when such a compound is made.

The preparation of plain paper was next discussed, and from the experience of those that took part in the debate it was demonstrated that in the salting of the paper, from three to fifteen grains of a chloride, with from a quarter to three grains of gelatine in each ounce of water could be used for immersing the paper. Such paper could be floated on a bath containing forty grains of silver and three drops of aqua ammonia in each ounce of water, being careful to dissolve 9-10 of the oxide of silver with C. P. nitric acid, thus leaving the solution slightly alkaline. Another method recommended, was to take a forty-grain silver solution, and to 1-3 of this add aqua ammonia until the oxide thus formed was dissolved; add this to the 2-3 portion of solution, and re-dissolve the oxide with C. P. nitrate acid. This bath should be slightly alkaline, and applied to the paper with a swab or brush suitable for the purpose. It was further recommended that the toning and fixing be done in a single solution containing:

Hyposulphite of soda,	1 ounce.
Chloride of gold,	1 grain.
Chloride of silver,	3 grains.
Water,	6 ounces.

With this bath no previous washing of the prints was required, but they were immersed as taken from the printing frames. When sufficiently toned they were transferred to a bath containing sixty grains of salt in each ounce of water, where they might remain from five to eight minutes, if darkly printed.

Mr. Duchochois stated that although his experience confirmed the truth of what had been said, his own practice was nevertheless slightly different. For albumen paper he strongly recommended a bath made by dissolving one ounce of silver nitrate in four ounces of water and precipitating the silver with caustic potash. After washing the deposit, re-dissolve it with a saturated solution of nitrate of ammonia, and add sufficient water to make twelve ounces of solution. With this bath the paper is quickly sensitized, and is after-treated in the same way as paper silvered with baths in common use. That this bath is better than many I am familiar with, I am perfectly convinced, or I should not take the trouble to speak of it here.

It being announced that the usual hour (viz., 10 o'clock) for closing had arrived, the chairman declared the section adjourned.

Boston Camera Club.—The annual meeting of the club was held at the rooms Monday evening, January 6th. The following officers for 1890 were elected: President, Henry N. Sweet; Vice-President, Francis Blake; Secretary, Edw. F. Wilder; Treasurer, William Garrison Reed; Librarian, John C. Lee; Executive Committee, F. Alcott Pratt, C. E. Davis, Jr., S. Henry Hooper. The resignations of ten members were read and accepted and the vacancies immediately filled from the waiting list by the election of the following: David W. Lewis, Adolf. Lomb, J. M. Bassett, Thomas W. Babcock, Edmund B. Garfield, Sylvester Baxter, A. Lincoln Filene, R. S. Stearns, and O. A. Eames. The Treasurer's report showed a gratifying state of the finances of the club, and upon his recommendation it was voted to pay the remainder of the club's floating debt from the income of the current year. In response to an invitation from a committee in charge of the matter, an informal exhibition of the work of members was displayed upon the walls. Although not quite as extensive as the exhibition of a year ago it was creditable and contained much that was fine. A large proportion of bromides was noticeable, some contact prints by this process by C. E. Hubbard being noticeable for softness yet full of detail. The prize (a year's subscription to a photographic journal) was awarded by ballot to John C. Lee for his study of a "Boy with Violin." Next in order of merit was Mr. Frizzell's "Village Blacksmith" in bromide, and

Mr. Means' "Unloading Seaweed," in albumen silver. At the close of the meeting the company partook of a collation which the committee on entertainment had provided in the studio.

The White Mountains.—Two years ago the Boston Camera Club withdrew from the American Lantern Slide Interchange, desiring to concentrate the efforts of its working members upon the "Illustrated Descriptions" of cities or localities. In February, 1889, "Boston" was given to the public, and ever since then two complete sets (one in England and one in the United States) have been in active circulation among the amateur photographic societies. The reception accorded to "Boston" encouraged the members to undertake another subject, and for several months they have been engaged in preparing a "Tour of the White Mountains." It will be ready to start on its travels by the first of March, and will be freely loaned to any amateur photographic society desiring to give a public entertainment. Applications should be addressed to William Garrison Reed, Treasurer, No. 25 Kilby Street, Boston, Mass.

"*Glimpses of California.*"—The Pacific Coast Amateur Photographic Association of San Francisco has recently completed an illustrated lecture with the above title, for circulation among the amateur photographic societies, especially those that are engaged in a similar work representing their own localities. The Eastern circuit is in the hands of the Boston Camera Club, and any society that desires to use the Lecture and Slides in entertaining its friends, may apply to William Garrison Reed, Treasurer, 25 Kilby Street, Boston, Mass.

Chicago Camera Club.—The members of the club are busy collecting material for a series of slides illustrating the beauties of Chicago. The slides, together with a descriptive reading, will be sent the rounds of the American Slide Interchange. The club now numbers one hundred and thirty-five enthusiastic members, and much good work is being done.

Baltimore Amateur Photographic Society.—The regular monthly meeting was held on Friday, February 17th. The President and many of the members were absent on account of the prevailing epidemic. The deaths of two members were announced and appropriate resolutions adopted. Two names were presented for membership. Samples of the new "Omega" paper, sent by Mr. C. E. Hopkins of Brooklyn, were handed around for inspection. It was voted that a committee be appointed to induce the members to make negatives of Baltimore and vicinity from the historical and picturesque standpoints in order that lantern slides might be made from them to form the Association's contribution to the Lantern Slide Exchange. The meeting was closed by the exhibition of a number of slides recently made by Mr. Williams and Professor Smith.

Society of Amateur Photographers of New York.—On December 21, 1889, a very enjoyable smoking concert was held at the rooms, 122 West Thirty-Sixth Street, which included an entertainment of music, lantern slides, sleight-of-hand tricks, and other amusing features. It was gotten up by Mr. T. J. Burton, Mr. A. L. Simpson, and others. Mr. Simpson played very effectively on the violin.

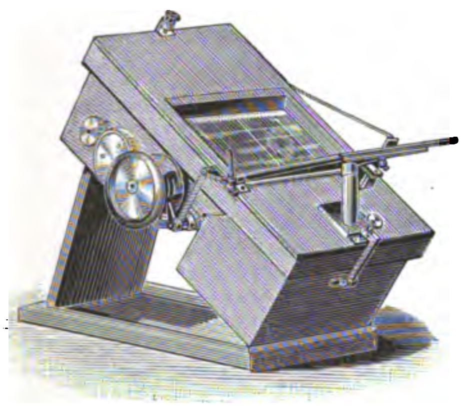
On Friday evening, December 27th, the regular monthly exhibition of lantern slides was given, comprising sixty-five slides of the Cincinnati Camera Club, many of which were very fine, and as many more by members of the society. The work of four or five ladies in the Cincinnati Club was noticeable for its excellence. Mr. Bullock's slide, "Cast up by the Sea," was a remarkable surf effect. Messrs. A. L. Simpson and Vilmar operated the lantern, while Mr. Beach announced the titles.

A very entertaining illustrated lecture, "The Tour of the Nile," by Dr. Charles Stuart Welles, was given before the society on Wednesday evening, January 8th. He had personally been over the ground and was able to relate a number of interesting incidents, giving much useful information regarding the modern discoveries about the Egyptian pyramids.

Tuesday, January 14th.—The regular monthly meeting, held on this date, was devoted almost entirely to "Camera Shutters," their number, kind, speed, and principles of working. Mr. F. C. Beach read an exhaustive paper on the subject (see page 42) showing a large number of models.

Following the reading of his paper, interesting remarks on the improvements in shutters and their speed were made by Mr. Cyrus Prosch (who exhibited several different models); Prof. L. H. Laudy, who strongly objected to the word "instantaneous," as applied to shutters, and thought very few reached as high as the one-one-hundredth part of a second in speed; Mr. W. T. Gregg, who also thought shutters seldom went faster than the one-seventy-fifth part of a second; and Mr. Wintringham, who exhibited and explained a model of his shutter, which is said to be very quick (see page 52). Mr. Gregg preferred a shutter that was between the lenses and opened from the center. Mr. H. M. Grisdale exhibited and explained a combined drop and flap shutter, also a disk shutter of his own construction, which were very simple and effective (see description on page 45).

Mr. J. H. Stebbens, Jr., read his report on sensitive tests of a number of dry plates, which will appear in a later number. The United States Photographic Supply Company, through Mr. A. Peebles Smith, exhibited Krügener's novel prayer-book camera and Dr. Just's novel automatic exposing and printing machine. As will be seen by the annexed engraving, the machine consists of a box holding a roll of sensitive bromide paper in one end which passes under the negative secured in the center aperture, is pressed against it, exposed to light by the sudden opening and closing of the door, shown in an upright position, is then released and wound up on an empty spool, similar to the Eastman roll holder. The time of exposure is regulated by gear wheels on the side. Four hundred impressions may be made in one hour. Mr. Smith practically tested the machine before the audience in this way: first, he made a flash-light negative of the room and members assembled; developed, fixed, and dried it, then he put it in Dr. Just's machine and made as many as twenty to thirty exposures in a very short time; took the machine into the dark-room, developed the bromide positives, fixed and washed them, and gave copies to all the members of the audience as a souvenir of the occasion before the meeting broke up. He used an incandescent electric lamp to make his thirty exposures with. He presented a paper on "Judging Negatives," giving his latest modification of the eiko developer.



DR. JUST'S AUTOMATIC PHOTOGRAPHIC EXPOSING AND PRINTING MACHINE.

Communications were read from Mr. G. Davison, Secretary of the London Camera Club; also from Mr. Charles, Secretary of the New Orleans Club, extending to our members the use of the facilities they afford. A letter was also read from the secretary of the Chicago Camera Club addressed to Miss C. W. Barnes, notifying her of her election as an honorary member in that organization, and congratulating her upon her admirable defense of the admission of women to photographic societies, as printed in the December number of the AMERICAN AMATEUR PHOTOGRAPHER. The Chicago Club has as many as thirty ladies among its members.

At the executive session of the society the resignation of Mr. David Williams as Vice-President and Director was read and accepted with regrets. Mr. Alfred L. Simpson who has done so much active work in the society was, on nomination, unanimously elected to fill the vacancy; this left a vacancy in the Board of Directors. Mr. Roumage was unanimously nominated for the place, but declined.

Mr. F. C. Beach was unanimously re-elected to represent the society another year in the American Lantern Slide Interchange.

Preparations for the Chickering Hall entertainment, February 5th, are progressing; there is scarcely a doubt but what it will be a success. The next regular meeting of the society will be held at the lecture-room of the School of Mines, Tuesday, February 11th, when Prof. L. H. Laudy will speak on "Photo-micrography," illustrating it very fully with the optical lantern and expensive apparatus.

F. C. BEACH, *Secretary.*

Philadelphia Photographic Society.—At the regular monthly meeting held Wednesday evening, January 1st, after the reading of various reports and communications, the election of officers and committees for 1890 was held with the following results: President, Frederic Graff; Vice-Presidents, John G. Bullock; Joseph H. Burroughs; Secretary, Robert S. Redfield; Treasurer, Samuel M. Fox; Executive Committee (three to be elected), Ellerslie Wallace, M.D., Charles L. Mitchell, M.D., Edmund Stirling; Committee on Lantern Slides, Edmund Stirling, Frank Bement, William H. Rau; Committee on Excursion, Samuel Sartain, John Carbutt, W. D. H. Wilson; Committee on Membership, Henry T. Coates, John Bartlett, George Vaux, Jr., David Pepper, Edward W. Keene, Joseph H. Burroughs, Charles L. Mitchell, M.D., Frank Bement, W. H. Walmsley; Committee on Revision of Minutes and Articles for Publication, John C. Browne, John G. Bullock, Robert S. Redfield. The vote for the Honor Pictures for 1889 resulted in the selection of these four pictures: No. 15, "Hesitation," by Robert S. Redfield; No. 32, "A Fair Quakeress," by Clarence B. Moore; No. 31, "A Wayward Spring," by Dr. Charles L. Mitchell; No. 36, "Making Friends," by Robert S. Redfield. A paper prepared by Dr. Charles L. Mitchell and Mr. John G. Bullock on the "Dangers of Flash-Light Compounds," was read by Mr. Bullock. A lantern-slide exhibition will be given at an early date. Chiefly through the efforts of Dr. Ellerslie Wallace, a complete catalogue of the library has been prepared. The estimate which the library committee put upon photographic journalism is shown in the following extract from the preface to the catalogue: "A noteworthy feature in the library is the number of complete sets of journals, dating from the earliest days of the art down to the present time. Although separate text-books of the various branches of photographic science are not wanting in the Society's collection, the journals—which detail the progress of the art from day to day—still remain the most useful sources of information."

Lynn Camera Club; Opening of The New Club House.—We had the good fortune to receive and to be able to accept an invitation to be present at the house warming of the Lynn Club's new quarters, Thursday evening, January 23d. As we expect shortly to publish an illustrated sketch of the club house, we need say here only that we congratulate the club on its possession of such commodious and well-arranged quarters. The walls of the pleasant reception room were well covered with the work of the members, but our presence as a guest and not as a critic makes anything like a criticism of the display out of place. The general average of the work was very good, and we regret that the limits of our space prevent special mention of certain pictures which particularly pleased us. The exercises of the evening were entirely informal, the only approach to formality being Mr. A. L. Rogers' address of welcome which abounded in wit and wisdom. Music, conversation, and the inspection of the prints, amply filled the evening until supper was announced. After most of the guests had departed, a flash-light group of the executive committee and the members of the orchestra was made, we having the distinguished honor of pressing the bulb of the lamp. Our own enjoyment of the evening was so thorough that we confess to a feeling of great indebtedness for the invitation, and we prize the charming souvenir, printed on Carbutt's Positive Film as the tangible witness of our evening with the Lynn Camera Club.

Providence Camera Club.—Lantern exhibitions have "had the floor" during December and January in the Providence Club. Early in December the club's slides furnished the New England Exchange were exhibited before starting them on the circuit. The next exhibition was a collection of slides loaned by the Hartford Camera Club, consisting of a number of English amateur slides and some by members of the Hartford Club. The latter were very pleasing, many of them being toned. Following the Hartford exhibition came an illustrated lecture on Paris and the Exposition of 1889, by Dr. J. H. Washburn, of the Rhode Island State Agricultural College. These slides were selected in Paris by Dr. Washburn, and comprise views in and around the Exposition buildings and the city, a number of them being fine instantaneous views. The colored slides were particularly well done. The slides furnished the New England Exchange by the Photographic section of the New Britain Scientific Association have also been shown to the club. This set is an excellent one, uniform in quality, and showing careful work all through. A noticeable feature of this set is a series of views in Mexico with interesting description, and several good flash-light pictures. The "Boston Ideal" lantern which the club has purchased is doing good service and is much admired by all who have seen it.

CORRESPONDENCE.

To the Editors of the American Amateur Photographer:

I noticed an article in your November issue headed, "A History with a Moral." The article struck me as being well calculated to deceive, discourage, and prevent photographers, as far as possible, from engaging in the only sensible, practical, and economical method of making the most beautiful and permanent picture know to photography—a purely-collodion picture, called aristotype.

Being a photographer, and successfully making my own emulsion and coating my paper for over a year, and producing finer results than I ever did upon ready-sensitized paper, I feel it my duty to my brother photographers to give them a few unvarnished facts in contradiction of the article referred to.

"To begin with," as "An Old Hand" says in the same issue, page 175, "the professional sensitizes his own paper; he is not to be beguiled by the praises of ready-sensitized paper, be they sung never so sweetly." This applies with the same force to aristotype as to albumen paper.

They are very particular to advise photographers to inquire into the responsibility of and how much capital any one has that is doing business in opposition to the visionary ideas of ready-sensitized paper. Would it not be as well for the photographer to look upon the other side and inquire into the reliability of the goods and the parties who are boasting of immense capital. Capital is well enough, if associated with a suitable amount of brains and common sense.

Mr. E. A. Gilbert, of Jamestown, N. Y., was the first to manufacture ready-sensitized aristotype paper for the trade in this country. His experience and knowledge of photography and photographic chemistry soon convinced him of its failure.

Mr. Gilbert at once saw that the only possible way to successfully make aristotypes was by preparing your own emulsion and paper, and using it fresh, the same as albumen, printing and toning fully in one-half the time of ready-sensitized, and producing one hundred per cent. better results at half the expense.

They say not one in one hundred has the steadiness of hand to flow their paper, even by the most improved frames. Isn't it a wonder that some company with capital does not start a photographic negative-varnishing establishment and ask the photographers to send their negatives to them to be varnished, because their hands are too unsteady to flow the varnish over their negatives?

How is it with you, old veteran wet-plate worker; what would you think of a man telling you that your hand was too unsteady to flow collodion over a glass for making a negative on; much less to tell you that you cannot flow it over a paper stretched perfectly flat in a frame with the sides extending above and all around the paper to prevent it from running off the edges? Would you not ask him, is your name Rip Van Winkle; have you any knowledge of photography? Mr. Tintyper, what say you; are you troubled with the shakes, if so, send your tin plates to Jamestown, N. Y., and have them flowed with collodion by machinery? They say it costs you too high to prepare your own paper. Well I should say it did, when you were compelled to pay $1.50 per ounce for emulsion that costs to make it yourself less than 70 cents per ounce, and the paper coated by yourself costs 10 cents or less per dozen cabinet size.

The learned gentleman also says: "It might be well to remark in this connection, that nothing short of absolute ignorance of photographic chemistry could so mislead a photographer as to allow the idea to be imposed upon him for one moment that he can make his own emulsion and prepare his own paper." *He stops here for the want of words to string out the sentence longer.*

The writer undoubtedly has been told that the above is true, nevertheless it is a downright insult to the fraternity and nothing short of absolute ignorance, both of photography and photographic chemistry, would ever prompt a man to make such an assertion, unless it be like a drowning man grasping at a straw. Telling you that you are too ignorant to make a common collodio chloride emulsion after a formula so plain and explicit that I think even the writer of the article referred to, with his limited knowledge of photography, could make a fine emulsion.

They tell you the slightest variation in any of the chemicals would throw you off, and you would have to analyze each and every ingredient. Do not allow yourselves to be influenced by such nonsense. There are plenty of pure chemicals to be had and no analysis required. Here is another scarecrow: They say that the variatiou of the Baryta coating of the German paper would render no one emulsion reliable.

The German aristotype paper which Mr. Gilbert is importing and selling large quantities of, is equaled nowhere in the world. It is not expected that amateurs will engage in the business so extensively as for each to prepare emulsion and paper, but it would pay every club for some one member to prepare it for the club and save money as well as reputation.

Mr. Gilbert's coating frames are so constructed with open corner that only once flowing with emulsion is required. All other frames require twice flowing with a thin emulsion in order to pour the surplus out over the top of the frame. He is getting it patented, and does not put an exorbitant price on them like many patented articles, but sells them so low that all can use them. A 20 x 24 sheet is coated much easier than silvering albumen paper. Enough for a day's printing can be prepared in less than half the time required for albumen.

Those wishing to satisfy themselves of the superiority of self-prepared aristotype paper, can do so by inclosing sixty cents to E. A. Gilbert, Jamestown, N. Y., for freshly coated paper, chemicals, etc., as he challenges comparison with any other. You do not have to buy any bottled secrets for toning baths. Full directions are given to make your own, only one toning bath required for the same batch of prints. No extra toning bath for softening the paper, as fresh paper is soft enough to tone with one bath. There is no use of trying to paste photographers' eyes. No professional photographer would ever think of depending upon ready-sensitized aristotype paper any more than he would albumen ready-sensitized, when it becomes known to him how easy he can prepare it and save one-half and produce such results that he would not be ashamed to give to his patrons.

In conclusion I will say, if there are any points I have not made plain, make it known by the usual sign and I will endeavor to explain them at some future time.

SELF-SENSITIZER.

OUR ENGLISH LETTER.

O. J. REJLANDER.

This letter does not pretend to be a critical history of the life and works of the late O. J. Rejlander, but a critique of his works now on exhibition at the London Camera Club. Your readers cannot fail to be interested in hearing something of one of the pioneers of photography, whose photographs are now collected, I believe, for the first time. The exhibition is therefore a most interesting one. I say I do not pretend to write a biographical critique of the man, because most of the materials are not at hand. For one thing we should require for the purpose a complete collection of his paintings, and if none now exist *tant pis* for Rejlander, for that would be conclusive proof that he had not much artistic ability. We should have to trace the reasons why he gave up oil-painting for a less perfect technique; for this exchange must always arouse a suspicion of failure in the first method in the mind of the inquiring critic. Was it incapacity that led him to the adoption of photography? This is at any rate the reason that some lesser lights have entered photography, and, captious as it may sound, I can never regard such renegades with the same feelings as those who felt from the first that photography was their natural technique. The very best work has been done by the latter class of men and such will always be the case, for failures in one branch of art are commonly failures in other branches. Mrs. Cameron towers a head and shoulders above Rejlander, and she was no failure at painting. The reasons for Rejlander's exchange would be largely shown by the quality of the paintings, etc., that he left behind him. We should, too, have to arrive at a just estimate of the state of art at the time of his appearance on the stage; to an estimate of the influence he had on our art and upon his contemporaries and they upon him; and lastly we should have to get a true knowledge of his personal character, of his dealings with opponents, of his aims, and above all of his self-sacrifice. It would be an interesting study, but personally I do not think the subject worthy of this study, for I may as well say at once that I was greatly disappointed with the show.

One of the first things that strikes the critic after wading through the dull wastes of the four hundred prints, is that Rejlander was a great *imitator*, perhaps an avowed imitator like some disciples and lesser lights. He has actually dared to dress and pose figures after certain well-known pictures, and he has done it so well that one involuntarily exclaims, "Ah! a Carlo Dolci," "a Raphael," "a Gerard Dow," "a Fra Angelico" (with a background actually painted in with illuminating gold). Such is really the case. There are unblushing plagiarisms of Dow's "Woman at the Window," of a Fra Angelico figure, of Raphael's "Madonna with the Plate," of a Carlo Dolci head, and probably of lesser lights. Now why did he imitate these pictures? Two theories may be enunciated. 1. It was either plagiarism, or, 2. It was *experimental.* He may have endeavored to show how closely a photographer could render such subjects as a painter had already expressed. Whatever the origin of such work it does not rank as a fine art at all, and if they are plagiarisms they are beneath contempt. The acute critic of the future must decide which they are. Now whatever their motive they either implanted or fostered a natural *sentimentalism* in Rejlander. It is most suggestive to the thinking critic that Rejlander picked upon such men as Dow, Dolci, Fra Angelico, and Raphael to imitate, for it conclusively shows his natural bent, and to my mind goes far to prove that he had but little artistic insight Whatever the origin of this spurious sentimentality, it shows itself in nearly every one of his works, excepting the scientific studies that I am coming to. The most flagrant examples are the two youths in the "Two Ways of Life"; "Fresh from the Cow"; "The Disciple"; a portrait of a child and another of a young woman caressing her heart; "The Message"—affected: a girl trying to catch hay-fever from pots of roses, yclept, "Girl Smelling Roses"; "The Glass that Cheers,"—artificial, and various gross and inelegant nudes. *Sentimentalism, affectation,* and *artificiality* are the three cardinal sins of this photographer, and they are three of the most deadly artistic sins. Rejlander seems to me to have possessed a most *theatrical* mind; his puppets seem to be acting in *poses plastiques* of a better kind, and this impression is strengthened by the careful but spurious amateur theatrical drop-scene in the notorious "Two Ways of Life." It is an improvised front-door-step scene, and is not very allegorical; rather suburban. We next come to another phase of this curious mind, *i.e.*, combination printing. We cannot even give Rejlander the credit of originality on this score, for he was anticipated by Messrs. Berwick and Annan of Glasgow, who exhibited a combination picture—a figure in a landscape—in 1855, two years before the appearance of the "Two Ways of Life," in 1857. But to Rejlander is due the credit of developing this wrong-headed method to its highest possibilities: to a height never attained by his followers. For such jugglery the result is a marvel of manipulative skill, fifty-seven negatives being employed in making this combination. Such work necessarily crumbles before severe criticism, even in the fundamental facts of perspective tone and atmosphere, and the "Two Ways of Life" can no more bear this criticism than any other production of the same kind. The allegory, too, is not well worked out, the story is not well told throughout, but the artistic grouping of some parts is very clever and artistic. Its special artistic demerits are the sentimentality of the two youths starting on life—they look as if they were posing at a penny-gaff instead of starting on life, the youth choosing the path that leads to the straight and narrow way looks positively as though he could not help it, and I don't think he could. There was evidently not much choice in the matter. The two gamblers look as if they had dropped in from the stock exchange to while away an hour. Rejlander was a *poseur*, he delighted in dressing up as Garabaldi, whom he in no way resembled. Witness his parading before his friend, H.P.R., as a heroic volunteer—a real burlesque. The theatrical element seems to crop up everywhere. But turn we to the good parts of this notorious picture. The sirens, who would dally with the not unwilling youth, are capital. The arts and crafts as represented by a schoolmaster and globe, and especially the blacksmiths, are cleverly and artistically posed. Still the "Two Ways of Life" is a magnificent failure, and Rejlander had the sense to see it, for later on he denounced the practice of combination printing. Still all must be grateful to him for exploring its possibilities and suffering in so doing. Here he was a true pioneer, and his abjured "Two Ways of Life" still remains the crowning achievement in this field of work, or rather play. Among *genre* works we have "The Sweep and His Wife,"—sweep good, but no sense of proportion, harmony, or composition throughout; wife, a regular virago. That Sweep's life was not a happy one, and the wife herself answers the question, "What's Up Jim?" or something akin. The "Scripture Reader," suggesting the origin of a disciple's more recent work, is weak in grouping, and the models are so evidently posing and dressed up that all illusion is lost. "An Old Woman in a Chair," suggesting certain works that for some years have hailed from north of the Tweed, "An Old Rustic," in which it is evident that Rejlander had no sympathy with landscape, for this background is very "villay" and suburban. "Go Away Mamma" is an affected parody, sure to draw the gallery. As we analyze him we find what trivial and petty *motifs* delighted him; we find, too, from his great love of properties that his theatrical instincts tell stronger than his artistic. He is too indifferent to refinement and elegance, as is shown by the type of model chosen. I will but add they were not children of the Muses.

We now come to another phase of his experimental work, his studies to help illustrate the late Mr. Darwin's "Expressions of the Emotions." I do not know the history of these photographs, which are of a quasi-scientific nature. It is probable that Mr. Darwin asked him to illustrate certain emotions, stating specifically what he wanted. Mr. Darwin may even have supervised the work. Whatever their origin, when we consider the processes and tools of the period, they are most clever in overcoming manipulative difficulties, but even here Mr. Rejlander can lay no claim to originality, for Mr. Darwin says in his introduction: "Finally, I must have the pleasure of expressing my obligations to Mr. Rejlander for the trouble which he has taken in photographing for me various expressions and gestures. I am also indebted to Herr Kindermann, of Hamburg, for the loan of some excellent negatives of crying infants; and to Doctor Wallich for a charming one of a smiling girl. I have already expressed my obligation to Doctor Duchenne for generously permitting me to have some of his large photographs copied and reduced."

From an examination of the plates in Mr. Darwin's book I find that Rejlander *acted* some of the expressions, and again I say the theatrical instincts were stronger than the artistic, and, since his portrait appears so often in these plates and he was so fond of acting Garibaldi, I am afraid that he often expressed the emotion of vanity. These results, then, show clever manipulative skill, good histrionic powers, enthusiasm, the last being one of his finest qualities. Again there is another experimental series—the nudes. Rejlander had learned to model when a painter, but nevertheless these nudes clearly prove he had no feeling for form, and would never have succeeded as a sculptor, just as to my mind his other photographs prove he could never have become a painter of any consideration. Most of these nudes are taken from women of a fat and coarse type, they are clumsily posed, and some of the groups are positively gross. Rejlander's was not a refined nature; all his work shows that. And what is art without refinement?

As an ordinary portrait photographer he has since been surpassed by hundreds of men, and at that period he was commonplace; to wit: his "Tennyson," a stiff thing as crudely composed as is well possible. When we recall Mrs. Cameron's portrait of the same man we realize what a GULF separates the two people. Mrs. Cameron was naturally a thorough and gifted artist and a most refined one, too. Rejlander at times got dim flashes of the truth of artistic focus; but Mrs. Cameron (up to a point) gripped it at once and applied it with judgment and knowledge. His groups vary, thus the "Solar Club Dinner" is capital, but the group of "Friends" is equally poor. Let us now turn to his most successful works. I do not know at what period these were executed but he did just a few excellent things but *no perfect work*. Among these excellences are two or three heads of a more refined type, and the boy catching a fly, called "Catching," and the sequel (which is rough on the fly), "Caught." These have their faults, for that boy is dressed up, that smock is a property and the background is inartistic—the piebald wall cutting the boy. But the expressions and actions are admirable. Another good one is an old fellow in spectacles, looking out of a window in a three-pair-back in Haverstock Hill. An old gentleman at a table covered with papers is first-rate. Something too much has been made of the affected street arab warming his head in his hands. Why! he is as plump as Jenny Lee, whom I once had the pleasure of meeting. Why! that arab is so fat and nice that the Whitechapel savages would have promptly *eaten* him. The "Girl Reading in Bed," is decidedly one of the most artistic of the series, but *eheu!* that bookstand, how little things do tell the mind of the delineator. The cats are good but nothing striking. The organ-grinder is good. And now I have done, and it must not be forgotten that my criticism is by no means searching. All the refinements of tone, composition, and poetry I have left untouched, for the very good reason that the works do not possess them. I find, then, that Rejlander was decidedly no genius, no artist, as I understand the word. I find him vain, sentimental, artificial, theatrical, but at the same time tremendously enthusiastic, energetically experimental, and best of all, self-sacrificing. I do not find him turning out bad work for money all the year and taking one picture per annum to go a-medaling with, and then posing in retired villa-affluence as an artist. No, Rejlander *sacrificed* everything for his art and the pity of it is that he did so little good by his self-sacrifices. I find, too, he did not write illiterate drivel on art, which showed his great good sense. The life of O. J. Rejlander is to me a most pathetic story, the story of a decidedly commonplace, uncultured, and unrefined mind struggling against its fate with a cheerful, fiery enthusiasm and self-sacrifice worthy of a better cause. The poor moth and the candle-flame are to me symbolical of his life. The man in some ways I admire and respect; he was a worthy pioneer. The "artist" I feel was but an artist of the green room.

P. H. EMERSON, B.A.M.B. (Cantab).

QUERIES.

15.—S. R. asks: 1.—"How uranium prints are made? 2.—How to make the chloro-platinate of potassium?"

16.—Can plates which have been exposed to light be restored to usefulness?

ANSWERS.

15.—Brush well-sized paper with the following:

Nitrate of uranium, ...	1 part.
Water, ...	16 parts.

Dry in the dark. Expose under the negative until a faint image is visible. To develop the print, float on one of the following solutions according to the tone desired.

For black tones, nitrate of silver, ...	1 part.
Water, ...	20 parts.
For reddish-brown tones, ferri-cyanide of potassium, ...	1 part.
Water, ...	36 parts.

When the print is sufficiently developed it is washed in water for a short time.

For violet tones, chloride of gold, . . .	1 part.
Water, ...	240 parts.

None but a competent chemist should undertake to make the chloro-platinate of potassium. The salt can be purchased more cheaply than it can be made by the amateur.

16.—Light-struck plates can often be restored by soaking them for some time in a dilute solution of bichromate of potassium, followed by a thorough washing and drying in the dark. The original sensitiveness of the plate is greatly lowered by this treatment.

BOOKS AND EXCHANGES.

THE CHEMISTRY OF PHOTOGRAPHY. By Raphael Meldola, F. R. S., etc. New York, Macmillan & Co. Pp. 382. $2.00.

To many of our readers Professor Meldola's valuable work is probably unknown, and we feel that we are doing them a favor by calling their attention to it as one of the more important contributions to photographic literature of the past year. The book consists of nine lectures delivered in the class room, and the subject is handled in a plain and exhaustive manner. Much light is thrown on the obscure reactions, which are supposed to take place in development and other photographic manipulations, and the professor has wisely refrained from seeking to give explanations of that for which no satisfactory explanation can be given. A careful study of the book will greatly increase the understanding of the more important photographic processes, and we heartily commend it to our readers.

PHOTOGRAPHIC MOSAICS. New York, 1890. Edward L. Wilson. Pp. 150. 50 cents.

Mosaics is an old friend to thousands who have received profit and instruction from former issues. The issue for 1890 is filled with good things and will not dissappoint expectation. Some of the best known workers of the two continents have contributed practical and helpful articles to its pages, and the editor has given the usual valuable summing up of the year's work. Numerous illustrations and a complete index give added value.

The *St. Louis-Canadian Photographer* celebrates the new year by appearing in a cover of original and pleasing design. The January issue contains some valuable reprints from foreign journals.

FOREIGN NOTES.

Simple Rule for Enlarging and Reducing.—Mr. W. R. Kennan sends the following to *Photography: Enlarging.*—Add one to the number of diameters if the negative is to be enlarged, multiply the sum by the equivalent focus of the lens, the result is the distance the positive should be from the center of the lens. Divide the above product by the number of diameters of enlargement, the result is the distance the negative should be from the center of the lens. *For reducing.*—Take the greater number for the distance from negative to lens center, and the lesser number for the distance of the positive from lens.

Mr. Andrew C. Cole, in the *Optical Magic Lantern Journal*, describes a simple transparency camera for making lantern slides from half plates without any focusing or other adjustment being required. The box is made of thin light wood and is six inches high, eight inches deep, and twenty inches long. One end of the box is provided with grooved wooden strips to take the negative. A lens of four and one-half inch focal length is inserted in a wooden partition which is permanently fastened in place at the proper distance to bring the lens ten and one-eighth inches from the negative, the lens end of the mount being nearest the negative. Near the other end a second partition is fastened with a central opening three inches square provided with grooved strips to carry the sensitive plate at a distance of ten and one-eighth inches from the convex side of the lens. This end of the box is closed by a light-tight door. The negative and the lantern-slide plate are inserted in position in the dark-room, the door of the box is closed and the whole arrangement is taken out into the light and the exposure made.

Mr. Andrew Pringle has been contributing a series of articles on "The Trials of Color-Correct Photography in Landscape" to the columns of *Photography*. Mr. Pringle concedes a slight advantage to the orthochromatic plate and is taken to task by Mr. Acres for not showing more enthusiasm on the subject. Mr. Acres challenges Mr. Pringle to a competitive trial of the two methods, and Mr. Pringle accepts the challenge. The result will be awaited with interest.

Mr. H. C. Carruthers, in the *Photograph Review*, recommends the following combined toning and fixing bath, which gives tones of any shade according to the length of time it is allowed to act. The formula is as follows:

Warm water, ...	10 ounces.
Acetate of soda, ...	2 drams.
Sulpho cyanide of ammonium, ...	2 drams.
Hyposulphite of soda, ...	20 drams.

When the salts are all dissolved and the solution has become cold, add five grains of chloride of gold, previously dissolved in one dram of distilled water.

In concluding a paper on "The Progress of Hydroquinone Development," recently read at the London Camera Club, Mr. Alfred Maskell wrote: "In conclusion, I may say that it would appear that we have not yet come to the end of newly proposed developers. New reagents will in all probability continue for a considerable time to be brought forward, unless, and this is not beyond the bounds of probability, the time should arrive when the sensitive plate is impressed in the camera and requires only to be rendered permanent; going back in fact to some extent to earlier methods. For myself I would wish for a truce; I should consider it as a relief that things for a time might remain as they are; no new discoveries in the shape of developers, printing methods, detective cameras, and so on. Then we might apply ourselves seriously and with greater calmness to the means we have at present at our disposal (which are great indeed), and perfect some systems which have been neglected," and we are disposed to agree with Mr. Maskell.

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Index to Current Photographic Literature.

Softness in Photographs and Means of Obtaining It; Photography, December 12th.

Photogravure; Photography, December 12th and 19th.

Lantern Slides; Photography, December 19th.

Trials of Color—Correct Photography for Landscape; Photography, Dec. 12th and 26th.

Photographing Interiors; British Journal of Photography, December 13th and 27th.

Sulphurous Acid in the Fixing Bath; Ibid, December 13th.

Sensitometry in Two Chapters; Ibid, December 13th and 27th.

Vignetting Silver Prints; Photographic Review, December 14th and 21st.

Eikonogen; Journal of the Camera Club, December.

Simple Chapters on Practical Photographic Chemistry; Wilson's Photographic Magazine, December 21st.

On Development with Pyrogallic Acid in Connection with Ammonia in Vapor; American Journal of Photography, December.

Platinotype Printing; Ibid.

Self-Luminous Transparencies; The Beacon, December.

Slide Making by Reduction; St. Louis and Canadian Photographer, January.

Darkness of Skies in a Photograph and How to Measure It; Photography, January 2d.

Shutters; Photography, January 2d.

Halation; Photographic Art Journal, January.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

The new advertisement of Barker & Starbird will repay perusal. We have personal knowledge of the specialties there mentioned and we can conscientiously recommend them.

From W. H. Rau, Philadelphia, we have received a catalogue of slides and prints of American and foreign views. The list includes nearly all the famous places and is very complete.

Messrs. Jas. W. Queen & Co., Philadelphia, have sent us samples of their new one-solution developer, the "Ultimate" for trial. We have tested it with pyro and eikonogen and find it very nearly all the makers claim for it. It develops short exposures remarkably well and there seems to be no difficulty in obtaining good printing density if bromide is used with discretion. As a one-solution developer of good keeping qualities we can recommend it.

From the same house we have received specimen Francaise and Pantagraphic lenses which we have tested as well as unfavorable atmospheric conditions would allow and greatly to our satisfaction. The Francaise in particular is all that one can ask of a lens. It will not do everything, but no sensible person expects one lens to answer all requirements. The Francaise possesses exceptional defining and covering powers, gives well-modeled images, and is admirably adapted for rapid work. The Pantagraph, a less expensive lens than the former, does not fall so very far behind it in performance. Its light transmitting power is somewhat less than that of the Francaise and its definition is not quite so crisp, but it emphatically belongs to the better class of lenses. Both of these lenses are finely finished and mounted. The Francaise is provided with a movable brass ring which, when slipped over the diaphragm slit of the mount, acts as a dust excluder.

Messrs. S. Trier & Son, of New York, have favored us with samples and prices of their card stock. They guarantee their stock to be of the highest grade, while their prices are somewhat lower than the same quality of goods of other makes. The samples sent us are of pleasing colors and well finished. Several of them were tested for hypo without showing any signs of the presence of the salt, so that we feel warranted in recommending the stock to our friends.

We call attention to the new advertisement of Mr. G. Gennert. From personal examination we know the Montauk Camera to be a good one, and the upright hard rubber fixing baths will speedily become a necessity in every dark-room.

The advertisement of Dr. C. L. Mitchell is one that should not escape attention. Dr. Mitchell is one of our leading photographic chemists, and his name on an article is a sufficient guarantee of excellence. We shall take an early opportunity of testing some of his specialties, and hope to report on them in our next issue.

Darlot's Improved Detective Lens.—With commendable enterprise Monsieur Darlot, the well-known French optician, has contributed his share in the great work in improving photographic lenses, by remodeling his very popular Rapid Hemispherical Lens No 1, and rendering it specially desirable for hand cameras. The diameter and focal length remain the same, viz., one inch, and five and one-half inches respectively. The hood which shielded the front lens against sunlight, has been omitted, thus reducing the total length of the instrument to one and one-half inches. A rotating disk with four diaphragms is now provided, operating between the lenses, and the entire instrument is neatly oxydized, so that if exposed to view, the lens attracts no attention. With the largest stop in the revolving disk, the newly improved No. 1 Rapid Hemispherical gives perfect definition all over a 4x5 plate, and in points of working-rapidity, penetration, and mechanical accuracy, is surpassed by no lens now on the market, except the extra rapid series Euryscope Lenses. The sole importers are Messrs. Benjamin French & Co., of Boston.

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O. P. SCOTT, of Chicago, **Gold Medal**, his exhibit was made on the New Eagle **Only**.

S. L. STEIN, of Milwaukee, **Gold Medal**, his exhibit was made on the New Eagle **Only**.

G. M. ELTON, of Palmira, N. Y., **Gold Medal**, the greatest and best part of his exhibit was made on the New Eagle.

The awards in class B were one gold and two silver medals; of these the Eagle carried away the gold and one silver medal:

L. M. BAKER, of Columbus, **Gold Medal**, the best part of his exhibit was made on the Eagle.

J. HY. DOERR, of Louisville, **Silver Medal**, his exhibit was made on the Eagle **Only**.

◆

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8 x 10	1.15	
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By Mrs Jeannette M. Appleton. Bierstadt Photogravure Co.

Mid-Winter.

THE AMERICAN
AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., MARCH, 1890. No. 3.

Our Illustration.

ALTHOUGH the past winter has not been prolific of snow storms in this section of the country, there have still been some snow falls which have clothed all nature in garments of white, and given opportunities for winter work in the open air. By general consent snow scenes are difficult subjects for the photographer, who finds that he has caught but little of the beauty of the scene which entranced his eye. But some may succeed where many fail, and Mrs. Appleton's "Mid-Winter" belongs to the small class of successes in winter work. We take pleasure in presenting so fine a specimen of woman's photographic work to our readers as well as Mrs. Appleton's pleasant paper on the subject.

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The Pleasures of Photography.

BY JEANNETTE M. APPLETON.

ONE of the principal reasons for my becoming an amateur photographer was the uncongenial labor of keeping any form of diary when traveling abroad, accompanied by a natural desire to preserve the memory of places seen and enjoyed, yet not considered worthy of description by guide books or reproduction by local photographers.

Chemistry has always been my hobby, and artistic knowledge gleaned by many years spent among the art galleries of Paris, Dresden, and Munich, and some study of art principles, inclined me to combine the two and take up photography, now nearly three years ago. It has proved of great interest to me—an educator in more ways than one—and last, but not least, many a home letter has been shortened by inclosing prints, rather than writing lengthy descriptions, the dates and names of places recorded, by the customary marking of negatives.

I am sure every woman must have felt great pride as well as interest in reading Miss Barnes' paper on "Photography From a Woman's Standpoint." That a woman's artistic taste and delicacy of manipulation often equals and sometimes excels that of men, has been conceded us; but for a woman to work seriously and systematically in a field where the execution of artistic perception often involves a sacrifice of personal daintiness to chemical results, is certainly rare enough to deserve the greatest praise. I say, with Miss Barnes, if we work conscientiously let us be allowed to meet men on their own ground, let our work be subjected to the same test and valuation, and receive the same rewards.

I was also interested in reading an article by W. J. Stillman in the *Photographic Times* of January 3d, entitled "Art and Photography." In drawing the line where the title of artist should be given or withheld, it reminded me of a remark of Gustave Doré's: He had asked me to come to his studio and look over the sketches for the illustration of Poe's "Raven," and see if I thought he had thoroughly understood the English poem. In answer to my exclamation of the delight his art must afford him, he responded so feelingly, "I am not called artist, but illustrator." Looking about the studio, the walls covered by his latest enormous pictures of brilliant hues, in one corner a huge, half-finished statue, all of which I had recently heard severely condemned, I realized in his words, his partial acceptance of the critical verdict and the expression of the bitter disappointment of his life. Apropos of Doré, I was surprised to notice *Wilson's Magazine* speaks of him as a photographic master in art.

The country surrounding my home is hardly what I should choose for landscape photography. The few picturesque bits rarely continue an interesting distant view with a harmonious foreground, but during the recent snow storm the entire country seemed transformed into a fairy-land of interweaving branches heavily laden with bright, glistening snow. A drive through forest and country roads, where my ponies' feet were the first to bend the dazzling carpet, was a rare delight, and I treasure the views obtained that day as a souvenir of a drive as enjoyable in its way as any over a mountain pass.

I could never quite agree to the necessity of short timing, or really under-timing, which is so repeatedly advocated to reproduce the purity of snow. In the case of my little views, the dark pines would have been a mass of black, as even with a long exposure many of them were dark in effect. When figures are introduced and rendered merely in silhouette, it certainly is a mistake. A collar around the lens prevents the glare of snow from fogging (halation), and as we all know the effects of long exposure can be regulated in development and so fully portray the half tones without sacrificing the desired pure whites.

A Trip to the Windward Islands, the Spanish Main, and West Indies.

BY GEORGE BULLOCK.

"HELLO! what's the matter? Where is all that water coming from? Close that sky-light quickly or we will be drowned out!" Such were the hurried exclamations from my companion in the lower berth on board the Brazil Mail Line Steamer Alliancia, as we were bound for the tropical seas, just a year ago. We had encountered one of those little storms on the edge of the Gulf Stream that they frequently have not far off Cape Hatteras, and it was just a trifle rough, so when we picked up a few tons of the aforesaid Gulf Stream over the bow it came rushing aft with a phosphorescent glow that gave us quite a surprise when several barrels of the same tumbled down through the sky-light of our state-room, and not only drenched the occupant of the lower berth and sadly damaged our baggage, but for a few moments illuminated our cabin. We managed to close the sky-light and light our lamp, but we did not relish stepping into the water surging back and forth over the floor with each roll of the vessel, trying to escape under the state-room door, but checked in its progress by a steamer rug and numerous articles of wearing apparel.

It was all very amusing so far, but when we discovered our camera and a couple of dozen plate holders floating around under the berth it did not seem at all funny, but fortunately, only the night before, we had wrapped the packages of films up in tin foil and then making bundles of them, tied them up in rubber focusing cloths, and, although they were exposed to dampness, they were not seriously damaged. The camera—a so-called 4 x 5 Detective, fitted with a six-inch focus rapid symmetrical Ross—was rescued from its briny bath before it was injured, but the film holders did not fare so well; the card-board slides seemed to have a great affinity to absorb water, and consequently increase in size; a few days in the sun, however, dried them out and we were able to use the majority of them. We used the celluloid films that were introduced on the market about eighteen months ago, and those that we had with us were among the first that were manufactured, and many of them were defective; the celluloid was unevenly coated with emulsion; numerous minute black spots appeared on development, and they were not uniformly cut to size, many of them having to be retrimmed before they would go into the holders.

A few days after the storm we began to realize that we were approaching the tropics; the water really began to look blue and was warm enough for us to enjoy a shower bath in the morning. The temperature climbed up to 80 degrees. Numerous fellow-passengers, who but a few days before during the storm wished that they were dead, and vowed, as they all do, that if they ever set foot on land again they would never leave it, began to make their appearance on deck and decided that life was worth living; but we were fully convinced that we were in the tropics when the purser appeared in a white duck suit.

It was about three o'clock on the morning of the tenth day out from New York that we were awakened by the discharge of the ship's gun as we dropped anchor in the harbor of St. Thomas, and the Alliancia was warped alongside of a coaling dock. I could not restrain my curiosity as to what was taking place on deck, so I hurriedly dressed and turned out, only to find that many of my companions had preceded me. Iron baskets filled with burning coal and suspended over the edge of the wharf illuminated a very weird scene: apparently an endless number (in reality about 100) of negro women carrying large baskets of coal on their heads entered the side of the vessel and in a few moments appeared again with the empty baskets.

It was a perfect moonlight night and I was not disappointed in the view that met my gaze when I strolled to the other side of the vessel and looked across the bay toward the town of St. Thomas, ranged on the side of the hills, the buildings mostly white or yellow in color, with red-tiled roofs standing out prominently in the moonlight against a dark-green background, the bay apparently landlocked. We could hardly wait for daylight, so anxious were we to go ashore, and, as the first rays of dawn appeared over the hills back of the town, we were off in a small boat for the shore.

St. Thomas is a Danish colony and was formerly a meeting place and point for re-shipment by the Royal Mail West Indian steamers, a place of importance, but now used mainly as a coaling station by several lines of steamers. You meet here a mixed population — Danish, Spanish, English, French, German, also Americans; but the bulk of the population is made up by the negroes. It was a perfect tropical day, the rich green foliage sparkling with dew in the morning sunlight, and it was with a very buoyant step that we wandered over the town, visited the market, purchased fruit, and resisted the temptations to buy bay-rum, or bay-oil, that was offered to us at such reasonable prices. It was all so new to us; so different, not only the architecture, but the people and their costumes, the great numbers of negroes, and the little burros. I believe that if I had been a "Kodak fiend" I would have exposed the entire hundred films during that morning walk, but we soon began to feel

ST. THOMAS FROM THE BAY.

the effects of the sun, for it now appeared to be directly over us, and we were very willing to seek the cool interior of a café for our morning rolls and coffee before we returned to the ship. I think every one went ashore, and when they returned they were all laden with fruit, green cocoa-nuts, cigars, and bottles of bay-rum, and were in the best of spirits after their morning walk.

We steamed away from the harbor of St. Thomas shortly after nine o'clock A.M., plowing through an indigo-blue sea, and with an atmosphere so clear that we could distinguish many of the distant islands. Santa Cruz was near by, but Porto Rico in the distance was plainly visible. As we reclined in our steamer chairs under the awning on deck, tracing out the islands that were visible, on our maps, now and then examining a sail through the glass, perhaps watching the numerous schools of flying fish, or the porpoises that would chase alongside of us for hours at a time, the day passed away far too rapidly.

Antigua and Montserrat were passed off to the eastward during the night, and we were off Guadeloupe early the following morning. Dominica came next, and as seen from the sea I consider it by far the most picturesque of the islands among the Antilles. Early in the afternoon we passed Martinique so close that we could plainly distinguish the inhabitants on the shore and obtain a very good idea of the situation of St. Pierre. Guadaloupe and Martinique are French; Dominica is English. The mountains on these three islands are covered with such a beautiful bright green foliage that they are considered the most beautiful of the Caribbean Islands. The day was more perfect than the one that had preceded it and it was almost with regret that we packed up that night, preparing to leave the Alliancia on the morrow.

It was early in the morning when we dropped anchor off Bridgeton, Barbadoes. The steamers do not go alongside the wharfs, but anchor out in the bay, and the passengers are conveyed ashore in small row-boats; the cargo in lighters, propelled by four or more oarsmen with long oars. We were speedily rowed ashore in a four-oared barge; had no trouble with the custom-house on landing, so we were soon on our way down to the Marine Hotel, at Hastings, two miles from our landing. We passed through Bridgeton, with its crooked, narrow streets, over the bridge that gives it its name; then passed the

A STREET IN BRIDGETON, BARBADOES.

government barracks and several villas, landing at the door of the Marine in ample time for breakfast, at which flying-fish were served to us for the first time.

THE BRIDGE AT BRIDGETON.

Barbadoes is an English island, about twenty miles long and twelve broad, and the most thickly populated place on the globe, being inhabited by a population consisting of 16,000 whites, 42,000 colored, and 116,000 blacks. Nearly every portion of the island is under cultivation, sugar being the crop, the land yielding about three tons to the acre; the yearly export being about 70,000 hogsheads. The temperature was about 85 degrees, Fahrenheit, but tempered by brisk trade-winds, so that it is not uncomfortable. Barbadoes does not possess that rugged scenic beauty possessed by many of the other islands, being, on the contrary, very flat; yet it has a charm of its own in its waving fields of sugar-cane, frequent rows of palm-trees, and dotted here and there by numerous windmills that add greatly to the picturesqueness of the undulating landscape.

BURRO AND CART.

One of the most delightful excursions that we made during our stay on the island of Barbadoes was a trip sixteen miles up the coast by rail to Bathsheba. We started just at dawn, and as we were whirled through miles and miles of sugar-cane we were treated to a more brilliant tropical sunrise than it is possible to imagine. Suddenly we emerged out of the forests of cane on to the precipitous eastern coast, where the breakers, sparkling in the morning sunlight, were dashing high over the rugged rocks. After a breakfast at Bathsheba we returned by train to Bushy Park Station, where we took a wagon and drove over to the Crane Inn, visiting several of the sugar plantations on the way.

They make very good use of the trade-winds at Barbadoes, for, on many of the sugar plantations, windmills are used to furnish power to crush the cane, and, as the wind blows very steadily, they answer the purpose admirably. We reached the Crane in ample time to enjoy a sea bath (although we found the water almost too warm) before our lunch, consisting of the fish and fruits of the country, was served. Late in the afternoon, as we drove back along the coast to Hastings over the most excellent of roads, we passed several diminutive carts drawn by little gray burros and loaded with the tops of sugar-cane that was being brought to town to dispose of as fodder, just as our farmers would bring in a load of hay.

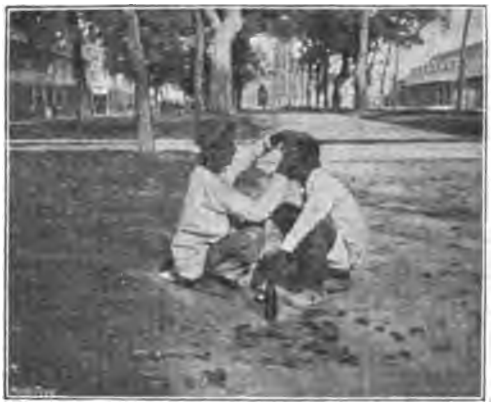
We remained at Barbadoes but a few days, as we decided to take the first steamer going south, and as soon as she was reported we repaired on board and were soon heading for St. Vincent, the next island where we stop to leave the mail and a small quantity of freight. Then came the island of Grenada with its beautiful harbor and the picturesque town of St. George nestled on the sides of the hills. We were allowed but a short time ashore, but we were pleased enough to wish that we might go there again. Trinidad, at the mouth of the Orinoco River, is the most southern of West Indian islands. Two arms extend westward from the island towards the main-land of Venezuela and form the Gulf of Paria. The entrances to this inland sea are called Bocas, the one through which we passed being called the Boca Mona, or Monkey's Mouth. The approach to the high cliffs of the island, and then through this passage, are very beautiful, but when we came out into the Gulf of Paria and headed across for the Port of Spain, the wind being all cut off by the surrounding mountains, oh! how hot it was; not a ripple on the water; only the dazzling reflection from a scorching sun.

GRENADA.

On landing at the custom-house I was afraid that I was going to be charged duty on my camera, but after a short argument with the officer, during which I offered to photograph him free of charge if he would call on me, he permitted me to pass, and we were soon landed, bag and baggage, at the Hotel de Paris. The island of Trinidad, but six hundred miles from the equator, is covered with a most luxuriant tropical foliage and, in the botanical gardens at Port of Spain, coffee, tea, an endless number of spices, all kinds of fruit, and a great variety of beautiful palms, are seen growing. The main exports are sugar and cacao, although at one time cotton was extensively produced. The town of Port of Spain has very little to boast of in an architectural way; the streets, with one exception, are narrow, the main street having a park or common in the center. They have no sewerage; open gutters are used to carry off the refuse (that is, what is left after the vultures, which act as public scavengers, obtain their living from them), consequently the odors are numerous and mosquitoes thrive; then, during my short stay, it was intensely hot, so I am afraid I did not form a very good impression.

STREET SCENE, PORT OF SPAIN.

Adjoining the town of Port of Spain is the Coolie Village, a very interesting place to visit, several thousand immigrants having been brought over from Madras and Calcutta to work on the plantations at Trinidad. You see them all over the town, some employed, others waiting for something to turn up. They are easily distinguished — the men, straight as an arrow, bare legs, with two scant cotton garments on the body, and usually a white turban on the head; the women, picturesquely draped, usually in bright colors, abundant black, oily hair, regular features, sparkling black eyes, and adorned with a great quantity of silver jewelry, bracelets, and bangles on the wrists and ankles; heavy ear-rings, frequently a nose-ring. They are a very quiet, temperate people; do not mix with the negroes, but flock by themselves, as it were.



COOLIE BARBER AT WORK.

When the steamer for the Spanish Main was announced I was very willing to leave Trinidad, and it did not take me long to get my traps together and go on board, nor was it with regret that I gazed at the receding town of Port of Spain as we crossed the Gulf of Paria, bound for La Guyra.

(To be continued.)

Under the Sky-Light.

BY CATHERINE WEED BARNES.

THE world now, as in Saint Paul's time, is ever seeking for something new and the camera is not likely to lose its charm while its horizon of possibilities is so constantly widening. Perhaps none of its numerous branches of work is more fascinating than portraiture under the sky-light. Certainly, if "the noblest study of mankind is man" the photographer learns to know a great deal of his various phases "from grave to gay, from lively to severe." The sharp eye of the camera sees clearly and reveals much more than the sitter believes possible. Few face it without attempting to slip on an intangible and yet visible mask which is far from being a deception to the impartial lens. The aim of the photographer is, or should be, to represent the sitter's true and at the same time best aspect. Very few people realize the mental effort it is to do this or understand the nervous strain to be undergone in posing a sitter, arranging the light and accessories, watching all the time for a better way to do it all, seeing that the various parts of the camera are in order, getting the proper focus, and yet obliged constantly to answer distracting questions from the sitter as pleasantly as if nothing else was under consideration. This is intensified when the sitter's friends come in " to help the thing along." With the average sitter, the muscles contract, the facial expression becomes strained, and the usual easy attitude appears stiff and unnatural. The more pronounced this is the more work is thrown upon the operator to counteract it, as far as possible.

Artists and actors are said to be the best subjects for the camera, but the unreality of the stage is, to my mind, so apparent in the majority of such pictures that their charm is lost. What seems fit and effective behind the foot-lights is tawdry in full daylight, and, in the manner of a brigand, the sitter seems to demand your applause or your life. The only use of such pictures to the amateur is in studying two points—the sitter's freedom from moving and his ease of attitude. For other helps, it is better to consult the great masters of painting and sculpture, train the eye by them and then turn to Nature herself, remembering that the attitudes which may seem striking or beautiful, meeting the eye for a few seconds, will appear very differently when made permanent in a photograph.

In my own limited experience I have learned with ordinary portraits to allow sitters to assume any desired position while I am arranging the light and studying them at the same time. They are sure to take, unconsciously, some characteristic position and then, all else being ready, it is short work to focus and expose a plate. This suggestion is, of course, for amateurs as the majority of professionals cannot spare time to study closely their sitters, but must often decide on the instant as to position.

With fancy or genre pictures the case is different, for the object then is, not to make simply a good portrait, but to make a picture, and this, to be successful, requires perfect accord between the sitter and operator. It is best to form a pretty clear mental plan, beforehand, of what is desired, decide on the details and then either hunt for a suitable model or wait for one to appear. Do not hurry, take plenty of time, and if you do not have as many pictures as your neighbors, they may be more valuable. When the aforesaid model does appear, make several exposures of varying length, keeping your nerves steady and the sitter interested. If any position specially suits you, duplicate it at once under the same conditions, for you may not have as good a chance again, and negatives have been known to get broken. From the first step to the last of the work, *take care*, and you are reasonably certain of a good result. Mythology, history, and legends are full of suggestions for this kind of work and the more one labors at it the quicker the mind takes possession of and makes them practical.

Illustrating poems is a very attractive study, especially in trying to see how far it is possible to make a photograph exceed what are considered its limitations. In using brush or pencil false drawing can be corrected or disguised but in camera work one learns, after painful and costly experience, to do the thing right in the first place. The negative should be so nearly perfect that it will need but slight retouching, no intensifying, and the resulting print will well reward the faithful worker. Portraiture is interesting enough to make one willing to pay almost any price in the way of work for a good picture, technically and artistically good. Luck has no place under the sky-light, the studio is already tenanted by hard work, but the wonders of light and shade respond to the will and inspiration of the skillful operator, he is practically certain of his results, and no snap-shot with the fastest possible shutter can ever give the intense satisfaction of making a really good studio portrait. I feel justified in denying the assertion occasionally made that art and photography are incompatible with each other and it seems as if those who make it are incapable of realizing that art, like science, can grow and is not confined to the well-trodden paths of past centuries but can learn from the world of to-day as well as yesterday. It is difficult to see why one is considered to follow art more closely because he works with brush or pencil than when, like a modern Prospero, he obliges the hidden forces of nature to do his bidding and render permanent his truly artistic conceptions. While depreciating some uses to which the word "artistic" has been applied, I claim that it is no longer the private property of painters and sculptors, but should also belong to those camerists who bring to their work the inspiration of sentiment and feeling and who truly venerate the source from which alone they can come—the worship of art.

Camera Shutters—No. 2.

BY F. C. BEACH.

[Read before the Society of Amateur Photographers of New York, January 14, 1890.]

THE P. D. Q. CAMERA SHUTTER.

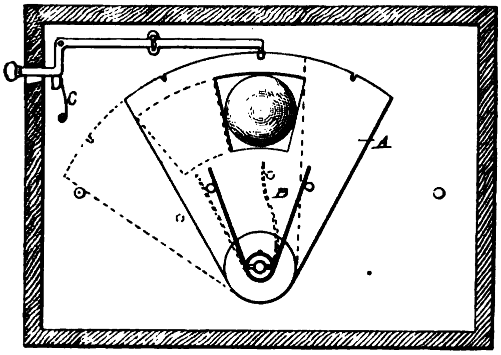


FIG. 1.

Fig. 1 shows shutter *A* with the front of the camera removed. Fig. 2 is outside of camera showing the handle in position, *B*, for tightening the spring. The spiral spring winds loosely around the axis of the shutter, the two ends projecting upward, which strike against pins on the face of the shutter. The spring is rigidly attached to an arbor on the axis, which projects through the case of the camera to the lever on the outside. The lever engages in depressions to hold it. *C* is the spring keeping the release lever in position. As shown in Fig. 1 the shutter is held open for a time exposure, the other two notches are for instantaneous exposures. Supposing the shutter has been thrown over to the left as in dotted lines, Fig. 1, and it is desired to throw it to the other side, the lever on the outside is thrown over to the right as at *B*, Fig. 2, which causes the spring on the right side to press against the pin of the shutter as seen in the curved dotted line in *B*, Fig. 1. Releasing the trigger throws the shutter at once to the right. Each time the shutter spring must be set by the lever outside. It is in effect a simple, self-setting shutter.

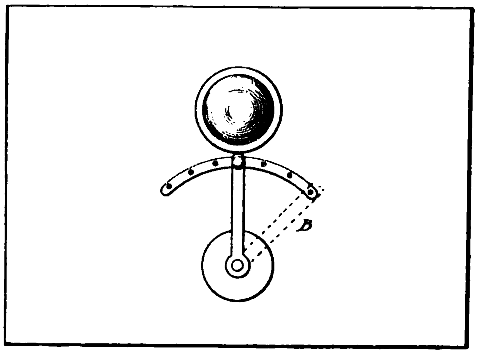
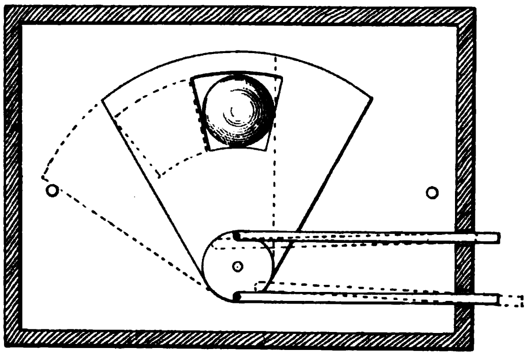


FIG. 2.

Fig. 1 is a back view; it is a V-shaped blade pivoted loosely at the apex, provided on its face with two pins against which the wire-spring arms rigidly attached to the pivot and connected to an outside lever, press, accordingly as the outside lever is turned to one side or the other. Fig. 2 shows the lever on the outside of the camera box engaging in notches to hold it for a strong or weak tension of the springs. Fig. 1 shows the shutter balanced for time exposures. The dotted lines illustrate the position of the spring when the outside lever is turned to one side. When the release trigger above is set off, the spring forces the shutter to the opposite side. The shutter cannot go back until the spring lever on the outside is turned to the same side. The release trigger engages in notches cut in the circumference of the shutter blade.

THE FACILE CAMERA SHUTTER.

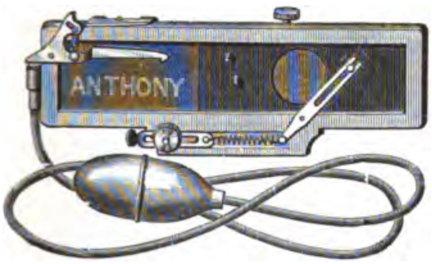


A simple sector-shaped disk pivoted at bottom, propelled by two bars or rods projecting outside of camera box. The shutter is shown open, the lens being behind the aperture. When in position of dotted line to the left, it is only necessary to press in the projecting bottom rod to instantly propel it to the opposite side, where it strikes against a stop-pin.

This shutter is similar in shape to the previous one except that it is operated by two horizontal rods, pivoted to each side of the center and extending out through the side of the camera. Pressing either rod inward with the finger gives a rapid motion to the shutter. When thrown over the opposite rod projects further out from the side of the camera so that the operator always knows which rod to press. The movement of the shutter is checked by pins on the inside face of the camera. It operates in front of the lens.

About five years ago the idea of having shutters made more compact and to operate between the lenses near the diaphragms, became popular, and ever since various forms have been brought out and improved upon. First we remember the Sands and Hunter shutter which consisted of two horizontally sliding plates with diamond-shaped openings moving in opposite directions, the whole being inclosed in a neat case, located immediately behind the lens, or later between the lenses. We believe it was operated by a spiral spring which could be very easily regulated to make the shutter move fast or slow. About this time Mr. William T. Gregg built a double horizontal sliding shutter which was placed just behind the lens. I remember seeing it tested on some hurdle jumping horses. But at its highest speed the images came out on the plate quite blurred.

Next in importance appeared the Hoover combined diaphragm and shutter, a model of which I have the pleasure of showing you. It is placed between the lenses. The case is made of gutta-percha, also the slides. It is somewhat bulky in comparison with some of the latest shutters, but it has advantages that are good. It has two slides moving horizontally provided with diamond-shaped openings. These are operated on the go and return principle by the half revolution of a disk, to which is attached a knuckle-joint link, connected to the shutter slide. By moving the disk and propelling spring to the left or right, carried on a pivoted lever, the size of aperture at which the shutter is to be worked is readily regulated, which is in effect fixing the size of the diaphragm, so that all loose diaphragms are dispensed with, the shutter itself taking their place. There is a time attachment which consists in expanding a disk of rubber upward by a pneumatic bulb; this forces up a rod which in striking the knuckle joint opens the shutter. The objection to this kind of piston is that the rubber disk after expanding a number of times sometimes breaks, also that it is not always air tight, which prevents a long exposure. For quick exposures of a second or two it works very well. To operate the instantaneous release the rubber pipe has to be attached to a separate air-pump.

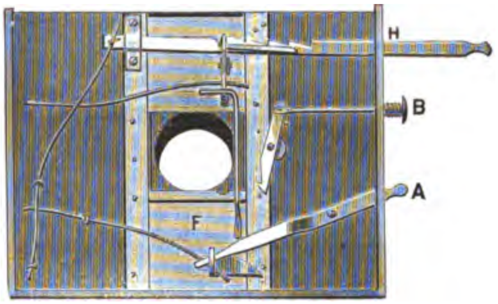


SINGLE SLIDING HORIZONTAL SHUTTER.

A similar shutter was patented by Gerry, Jackson, and Day in 1886, the difference being that the shutter slides were propelled by long spiral springs on the outside, inclosing guide-rods. It never came into general use. Single shutters sliding horizontally are also used, propelled by a spring and set by a rod. Such is the construction in Anthony's Climax Camera.

KRÜGENER'S BOOK CAMERA.

Krügener's Book Camera has a slide operated by a spring, the slide being released when a supplementary shield is pulled, designed to protect the lens when the shutter is being set. The plates are changed by a rod at the back of the camera.

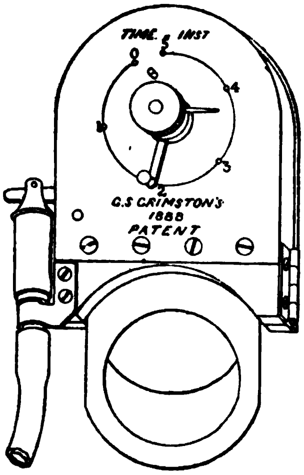


THE DOSSERT SHUTTER.

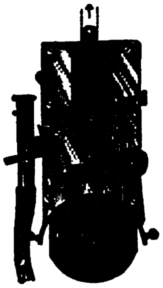
This is a new shutter, on the sliding principle, recently patented. It is shown open for time exposures, the upper slide being locked by the bar. The shutter slide is similar to a drop shutter, except that it is divided into two parts. *F* is the lower part carrying a projecting lug having an opening in which the long end of the setting lever *A*, and the lower horizontal wire propelling-spring operate. On the right-hand upper portion of *F* is secured a wire-like hook, bent out, with its upper end at right angles to its length. It moves up and down with the slide *F*, and in its downward movement presses on the back of the hook release-spring lever, releasing it from the horizontal notched sliding time-bar *H*, which is propelled to the left at the same instant by a third wire spring. The movement is really like two slides following each other. Secured to the side of the bar *H* is a thin strip of metal on which the spring-lever hooks. The time of the opening is regulated by the distance the bar *H* has to move, as the hook on the upper slide is not released until the end of the metal strip attached to the side of *H* slides from under the hook. The notches indicate quick or fast exposures. If *H* is only drawn out one notch, then the exposure is quick; if extended to the last notch, then the exposure is slow. The upper slide is pushed downward by a second horizontal wire spring, as shown. When the outer end of the lever *A* is pushed down the slide *F* is raised to cover the opening of the lens and is locked by the release-trigger *B*. To operate it, the button *B* is pressed, slide *F* at once descends, the wire hook on *F* presses on the lever hook on the upper shutter, releasing it from the notch on *H*; at once *H* slides inward and allows the upper shutter to descend, following *F*; a flange lip on the upper edge of *F* covers the joint of the two slides, which allows the shutter to be set without drawing the slide. All the parts are made very simple and light and work with very little friction. To hold back the upper slide for time exposures the bar *H* is pulled out far enough to let a notch on its under side catch on the edge of a plate set in flush with the side of the camera. This prevents *H* from sliding inward. By raising the end of *H* with the finger it is drawn in and allows the upper shutter to fall.

Scofield's shutter, operated by inflating a large rubber tube resting on a wire, is a novel yet simple idea. The round disk is very light and slides vertically over the smooth face of the lens plate. In its normal position the shutter is closed, but when the bulb is compressed, the rubber tube connected to the disk is inflated, which, in bearing on the wire over which it folds, acts as a fulcrum and raises the disk.

Most of the horizontal sliding shutters are too bulky, hence within the past two or three years, manufacturers have been trying to get up very compact affairs, generally locating them between the lenses. The Grimston Shutter was one of the first novelties of this kind, and was made so thin that it could be pushed into the ordinary diaphragm slot of the lens. The shutter slide was made of extremely thin steel, which was attached by a connecting bar to a rotating disk arranged above the part intended to be inserted in the



THE GRIMSTON SHUTTER.
Inserted in diaphragm slot of lens; the shutter moves up and down. The handle at the top regulates the tension of the spring to make it go fast or slow.

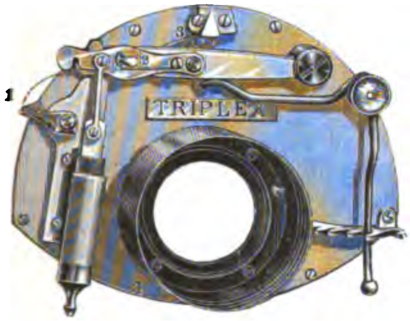


THE OPTIMUS BETWEEN THE LENS SHUTTER
Is inserted in the diaphragm slit of the lens; by mechanism on the back, the shutter flies up and returns, like the Grimston Shutter.

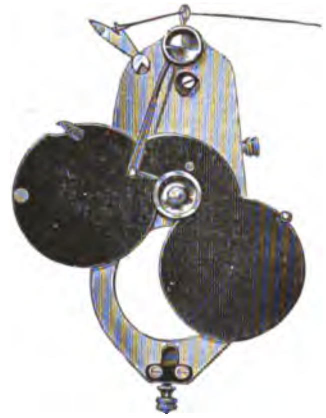
diaphragm slot. The disk was propelled by a coiled steel spring. The movement was on the go and return principle. An improvement on this shutter was made by Mr. W. T. Gregg. By certain attachments a time and instantaneous exposure could be made.

The Optimus Between the Lens Shutter operates on a similar principle, but has additional attachments. It is claimed to work as quick as the $\frac{1}{75}$ part of a second, or may be prolonged.

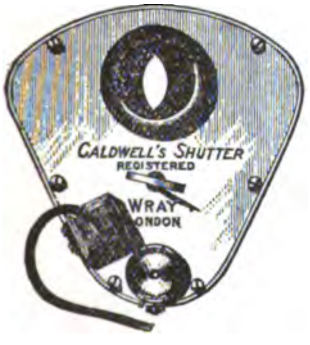
The favorite principle of working pivoted shutter leaves or blades is to have the actuating pin or slot very near the pivoted end of the shutter, so that a very small movement of the propelling mechanism will produce a rapid movement of shutter. The blades are made very thin and very light. I have known of their being made of aluminum in order to secure extreme lightness. When there are two blades to open and close, the movement is generally operated by a spring forcing down a lever, the lever having pins which engage in slots in the shutter. Of this class may be mentioned the well-known Prosch Triplex Shutter (Mr. Prosch will show it to you later) with devices for giving time and instantaneous movements. The leaves of this shutter pass each other in opposite directions and are made very thin.



PROSCH'S TRIPLEX SHUTTER.



PROSCH'S ECLIPSE SHUTTER.

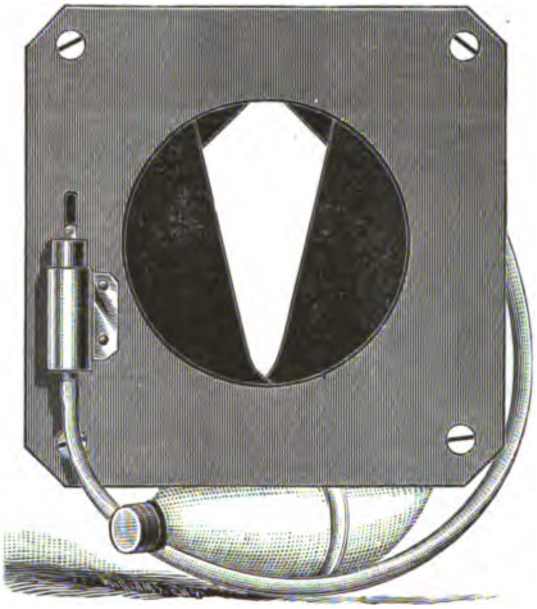


THE CALDWELL SHUTTER

Operates similar to the Prosch Shutter, either in front or behind the lenses.

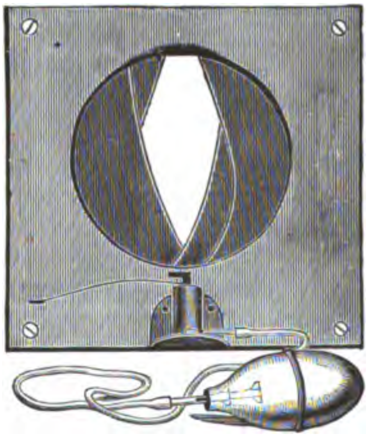
I have a model of Prosch's Eclipse Shutter, made before the fashion of placing shutters between the lenses came about. It is secured to the hood of the lens. The double escolloped shutter-slide gives more exposure to the foreground than to the sky and is excellent to obtain cloud effects.

Working on the same principle as Prosch's Triplex is the Caldwell Shutter placed between the lenses. With it exposures varying from 1 second to $\frac{1}{150}$ of a second are said to be made.



THE LOW COMPOUND SHUTTER.

Studio shutters, compound and simple, of the open and return kind, operated by a pneumatic piston, are the Green Shutter, a model of which I have, and the Low Compound Shutter, also, which is on exhibition.

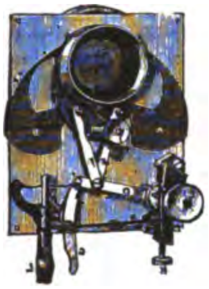


THE GREEN PNEUMATIC SHUTTER.

A piston at the bottom operates the shutters, and it may be held up after the bulb is compressed by a small valve in the bulb.

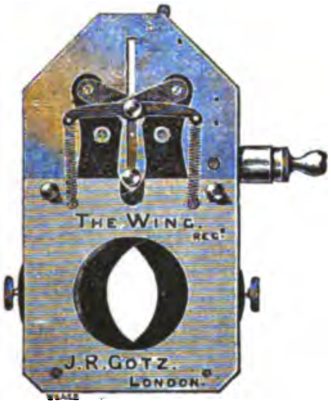
Both may be placed behind the lens inside of the camera or behind or between the lenses. They have four separate leaves pivoted and slotted in a certain way to give more exposure in the center.

The Wollaston Diaphragmatic Shutter is also based on a similar principle to Prosch's. He has also a special diaphragm plate of peculiar form arranged behind the shutter. It is more bulky than the Prosch Shutter, but it is said to work in the $\frac{1}{120}$ part of a second.



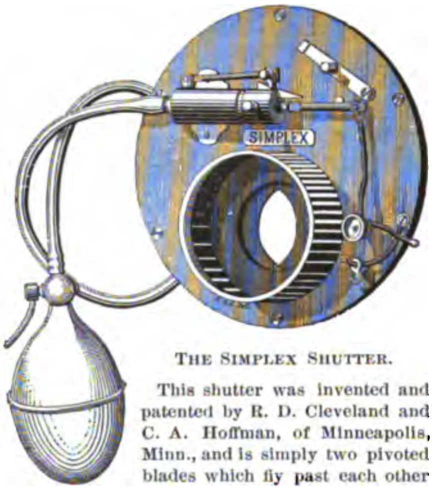
THE WOLLASTON DIAPHRAGMATIC SHUTTER.

The shutter is placed between the lenses. The bars, *E*, connect to two pivoted blades, pivoted at a point just under the lens. These bars are connected to a pivoted lever, *D*, which is propelled downward by a spiral spring at its axis. Releasing the trigger allows the lever, *D*, to descend and propels the two blades by each other. The openings in the blades are oval shaped. He has also an S-shaped diaphragm plate, located in a slit behind the shutter not shown. The shutter may be set also for time.



THE WING SHUTTER

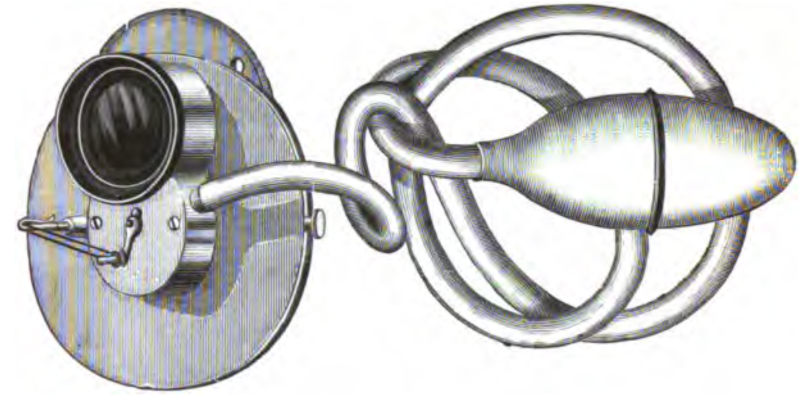
Is secured to the hood of the lens by two thumb screws on each side. The cross-bar, from the ends of which depend two spiral springs, has a guide pin which travels in the slot seen above. In its descent it operates the two pivoted wings of the shutter compelling them to pass each other.



THE SIMPLEX SHUTTER.

This shutter was invented and patented by R. D. Cleveland and C. A. Hoffman, of Minneapolis, Minn., and is simply two pivoted blades which fly past each other somewhat on the plan of the Grisdale Sector Shutter. There are special devices on the front for making time or instantaneous exposures, and for regulating the tension of the spring shown on the right. A special latch descends to lock the shutter after it has been set off. For time exposure the bulb is

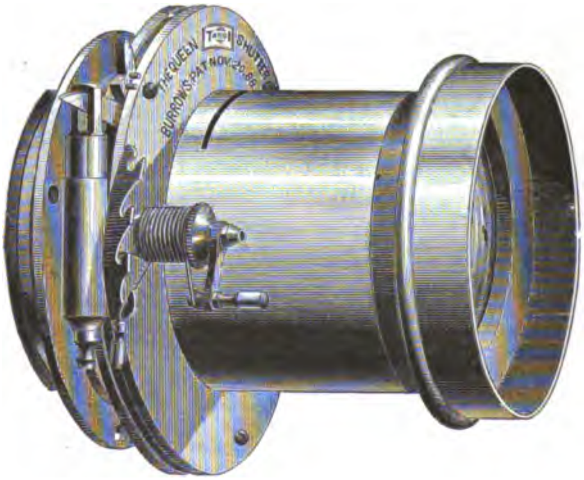
kept compressed, or for focusing it is compressed and the lever of the valve near the bulb is turned at right angles which holds the air in the tube and the shutter open. By unscrewing a small valve on the pneumatic tube, and letting the air leak out gradually, time exposures of varied length may be made.



THE WALES SHUTTER.

The shutter consists of two wings operated by a rotating disk or levers, to go by each other, propelled by the elastic band shown on the outside. It is released by the pneumatic bulb. There is a diaphragm plate just behind the shutter case, which is inserted in the tube between the lenses.

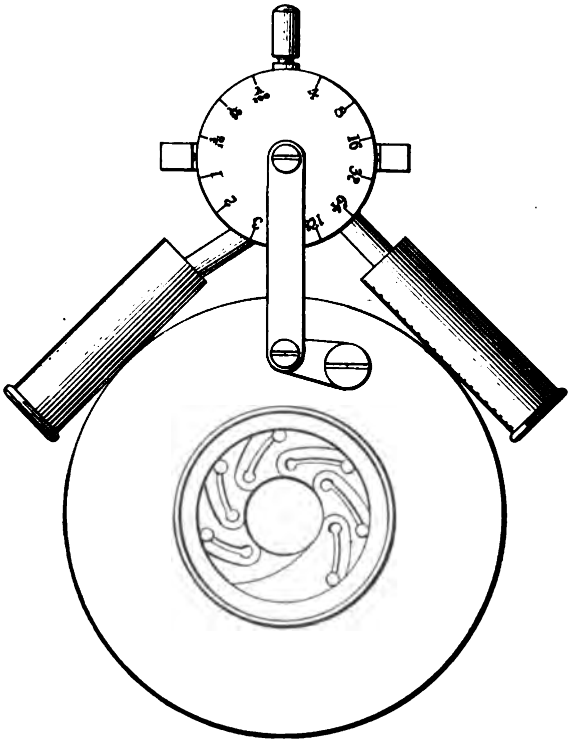
The next form of shutter is based on a rotating ring propelled by a flat-coiled spiral spring. From the ring is a bar, which, being attached to one shutter blade, by suitable mechanism, also operates the other. As the ring rotates it opens and closes the shutter blades. This is probably the most compact method of operating the shutter blades. Examples of such mechanisms, operating two shutter blades are shown in Hitchcock's Shutter and in the Queen Shutter.



QUEEN TIME AND INSTANTANEOUS SHUTTER

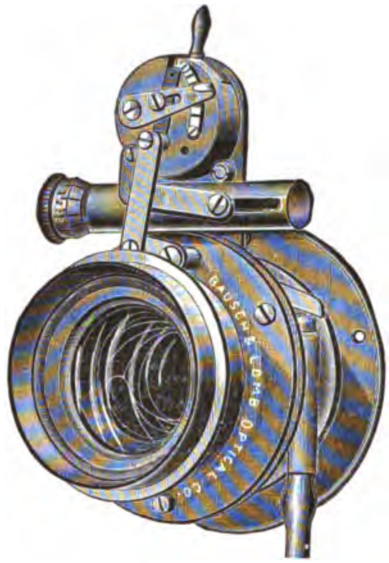
Is propelled by a coiled wire spring, the end being arranged to be placed in different notches according to the speed desired.

In the Bausch and Lomb Shutter, a model of which I will show you, a set of several pivoted overlapping leaves are moved by motion being imparted to one leaf through a crank and lever connecting with a rotating disk, propelled by a coiled-watch spring. This necessitates that every leaf shall have a slot and pin in it, that the motion from one may be carried to the other; when expanded they form a circular aperture. By other devices the throw of the crank is regulated so that the size of the opening may be contracted. There is also an air brake or piston for regulating the speed similar to the Newman Shutter. It has a time movement, too. Altogether it is a finely made instrument and generally works well. I have used it for some little time. Have found that the parts made of steel rust some and slightly impede the movement, a point, however, which is not serious.



BAUSCH AND LOMB'S IMPROVED SHUTTER.

This is a front view of the shutter. The pneumatic tube for regulating the speed of the shutter is now divided into two cylinders, which act as air chambers and give a more regular motion. They are reciprocating, that is, while one plunger moves in only one direction, the other (on the left hand) passes over the center and has a go and return movement. The projection on top of the upper disk is used in setting the shutter; the lever on the left regulates the speed. It is shown set between 1 and 1-10th seconds. The lever on the right regulates the size of the aperture, and is shown set between f-16 and f-32. Another improvement is the locating of the lever for governing the time or instantaneous motions of the shutter on the face of the upper disk instead of on the back as heretofore. The time of the shutter is accurately measured, and it is said to operate precisely as stated on the face of the disk, viz., from 3 seconds up to 1-100th of a second as the operator may desire. It is worked by a powerful coiled spring.



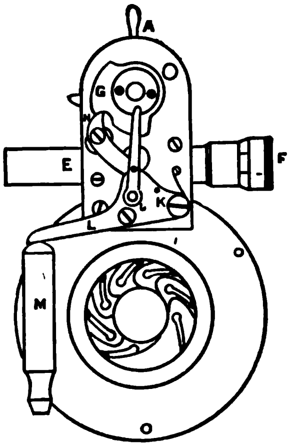


Fig. 2.

Fig. 1.

THE BAUSCH AND LOMB SHUTTER.

Referring to Fig. 2, which is a rear view of the shutter, *A* is the handle on the front of the shutter for setting it. *G* is the rotating cam for time and instantaneous exposures. *H* is the secondary release trigger which is operated by the primary trigger *L*, pivoted at *K*. The lever pivoted at L when upright, as shown, sets the shutter for instantaneous exposures; when turned to the right in a horizontal position, the shutter works as a time shutter. *E* is the pneumatic piston for regulating the speed. *M* is the air pump for releasing the shutter.

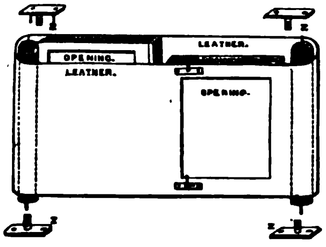


Fig. 1.

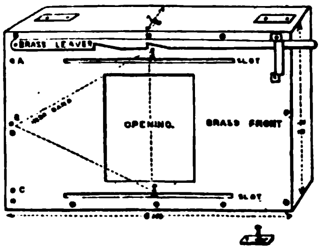


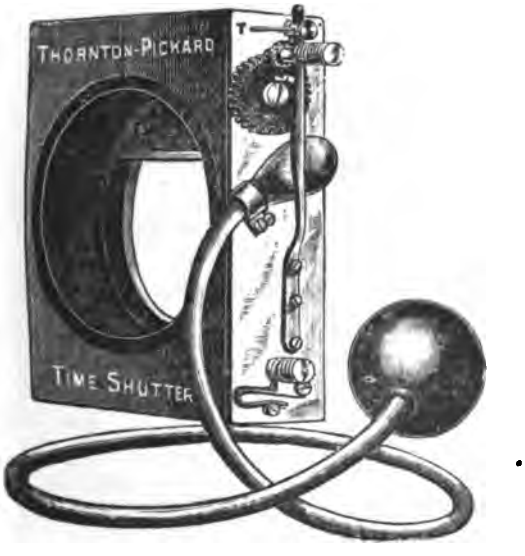
Fig. 2.

VALENTINE'S CURTAIN SHUTTER.

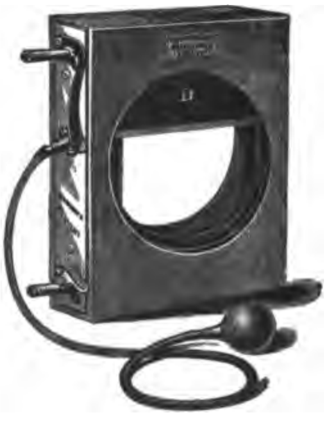
Fig. 1 shows a continuous band of leather with two apertures strengthened with wood around the openings. The band passes around two rollers whose axes operate in metal sockets, *Z*, which are secured by screws to the inside of a wood case as in Fig. 2. Two guide pins are secured to the outer face of the curtain seen in Fig. 1 and by itself under Fig. 2, which project through two slots as shown in the face of Fig. 2. Passing around these pins and connected to a stationary pin at one end of the box at *B*, Fig. 2, is a rubber band shown by the dotted triangular line. This may be secured underneath the cover. A brass release lever at the top, Fig. 2, has two notches in it which engage with one of the pins on the shutter. One notch is to hold shutter open for focusing, the other for exposing. By raising the right-hand end of the lever the shutter is released, and as both apertures pass each other in opposite directions, the exposure is made.

A principle in shutters that has had many advocates is the roller-curtain shutter. Among the first of this class exhibited before the society was Mr. A. Loefler's shutter, in April, 1885. It was a curtain arranged just behind the lens, which had an aperture the size of the lens, and was operated by a spring roller, released by a suitable trigger. Mr. G. W. Valentine, in the 1890 Year Book, page 78, shows a simple double curtain, passing over two rollers, one at the top and the other at the bottom. It is almost like a continuous band with two apertures arranged so that they shall coincide opposite each other at the instant of exposure, which is done by one side moving up and the other down. It is supposed to be attached to the front of the lens.

Other shutters that appear to operate on a similar plan are the well-known English Kershaw, and Thornton and Pickard Time and Instantaneous shutters. Each are placed on the front of the lens and have suitable means for releasing the shutters, also devices for retarding them for time movements.



THE THORNTON PICKARD SHUTTER.



THE KERSHAW SHUTTER.

A very old form of shutter recently patented by Anschutz, of Prussia, is the curtain shutter having a horizontal slit, adjustable to different widths, arranged to pass directly in front of the sensitive plate. It is operated by a coiled spring roller, released by a suitable trigger projecting through the top of the camera. Specimen photographs taken with this instrument are very fine. The original picture is very small and then enlarged to any desired size, the object being to make less space for the curtain to travel over. It is claimed for this shutter that every part of the plate is fully exposed, getting the benefit of all of the light passing through the lens.

Briefly reviewing the camera shutter inventions for the past ten years, many perhaps have been omitted; but I think the average amateur will take in at a glance, from what I have shown, that the present tendency is to locate the shutter between the lens, is to be compact, light, and quick, and capable of having time and instantaneous movements. I have said nothing about Muybridge's special shutter mechanism, preferring to confine myself more particularly to devices in use by the professional or amateur photographer. Shutters with simple, non-breakable springs and positive movements are perhaps the most desirable. The subject of the duration of the shutter exposure is an interesting one, and deserves careful study. It is probable the next ten years will develop many useful improvements in shutters; the more the matter is considered the more interesting it grows.

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Testing the Rapidity of Dry Plates.

[Report of the Chemical Committee presented to the Society of Amateur Photographers of New York, January 14, 1890.]

LAST year's Chemical Committee, consisting of Mr. Edward Leaming and myself, undertook an investigation into the sensitiveness and speed of the various brands of dry plates now on the market. As, however, Mr. Edward Leaming was only enabled to give me a limited amount of help, I have undertaken to complete the experiments myself. In carrying out these experiments it was decided to discard all the usual forms of sensitometers, as none of them appeared to be accurate enough, but, after some thought, a form of sensitometer was adopted which promised to obviate and overcome all the defects of the others. This sensitometer consisted of a brass plate pierced with 25 accurately measured holes, varying in size from 2-1000 inch up to 50-1000 inch, in regular arithmetical progression. The brass plate was fastened to the front board of a camera in place of the lens. The camera was thus fastened to a board three feet in length. Two feet from the front end of the camera was placed a standard sperm candle (such as are used for photometrical purposes) and contained in a spring candlestick, thus keeping the light at a constant height.

In order to test a plate I proceeded as follows: the camera was extended four inches, the ground glass removed, and the plate to be tested inserted in its place. The sperm candle was lighted and allowed to burn for five minutes until the flame was perfectly steady. The sensitometer plate was now covered over with a focusing cloth, the slide withdrawn from the plate holder, and, after covering the sensitometer, the plate was exposed for 30 seconds by a stop watch. The plates were then placed in a developing tray and developed without rocking, with one dram each of Hoover's pyro and potash developer, and two ounces of water, for ten minutes, and then fixed in the usual manner. In this way a series of images of the candle flame were photographed upon each plate, and, of course, the faster the plate the more images of the candle flame would be reproduced. In order to fully interpret the results obtained a bromide print was made from each negative, and the prints showing the greatest number of candle flames were recorded as representing the fastest plates. Each print was exposed to a four-foot gas-burner for two seconds, and developed with one ounce of eikonogen developer for two minutes. Tabulating the results obtained we get:

Name of Plate.	Sensitometer Number.	Relative Speed.
Eastman Transparency Plate,	4	1
Forbes Insoluble Brilliant,	20	5
Standard 25,	23	5.62
Smith and Harrison,	24	6
Forbes Insoluble Portrait,	24	6
Cramer 40,	24	6
Stanley 25,	24½	6.12
Harvard 25,	24½	6.12
Eagle 40,	25	6.25
Eastman Peerless,	25	6.25

By relative speed, I mean the speed of one plate as compared with another taken as standard of slowness. In these tests the Eastman transparency plate was found to be the slowest, and was therefore selected as my standard.

In conclusion, I wish to thank the gentlemen who kindly supplied me with samples of their plates for testing.

JAMES H. STEBBINS, JR., *Chairman.*

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Ammonium Bi-Sulphite as a Deoxidizing Agent in Photo-Developers.

BY W. H. GILDER.

THE use of the above chemical, as a preserver of pyro solution, simplifies greatly the preparation of a developer; but a small quantity being required to keep a stock solution of that article positively clear, and the completed developer (with alkali added) shows but a slight tint of color, until it is placed in use upon the plate, and then its change is much slower than that which occurs with other preservatives; the negatives resulting from its use, in color and other qualities, are of the best.

My *stock* solution is made as follows:

Water,	1 ounce.
Pyro,	30 grains.
Ammonium bi-sulphite,	½ fluid dram.

Of this, take half an ounce, dilute to four ounces, and add alkali, say carbonate of potash five grains, and carbonate of soda ten grains, to each ounce of solution.

The ammonium-bi-sulphite, what I have, is in a fluid condition, colorless, and apparently somewhat like a mixture of glycerine and water. It was obtained from a friend, a chemist, who had prepared it himself for use in his laboratory, and, if I remember rightly, is made by subjecting sulphuric acid and charcoal to heat, and conducting the disengaged gas over to a wash bottle containing ammonia.

I mention this, as I do not remember to have seen any mention of the compound in books I am familiar with, and possibly it may be difficult to obtain it.

THE

AMERICAN AMATEUR PHOTOGRAPHER.

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EDITORIAL COMMENT.

The American Aristotype Company of Jamestown, N. Y., are now occupying their new factory. The new building, built especially for this enterprise, is two stories high, 35 x 150 feet, with a total floor surface of 11,500 square feet. All of the improvements and equipments suggested by their two years of experiments have been carefully worked out in their laboratories, machine rooms, chemical vaults, and aging departments. The trustees of this company are the Hon. Porter Sheldon, also president, Geo. W. Tew, president of the City National Bank, H. W. Tew, cashier of the City National Bank, and C. S. Abbott, also secretary and treasurer. It is a foregone conclusion that this company is turning out a ready sensitized collodion paper that is reliable and practical enough to have come into very general use among photographers or the construction of facilities for increasing their capacity over five times would not have been warranted.

English Photographic Magazines at Reduced Rates.—We have been asked to give clubbing rates for the English magazines, and we are now prepared to furnish the following magazines, in connection with the AMERICAN AMATEUR PHOTOGRAPHER, at reduced rates: *The British Journal of Photography*, $6.80; *The Photographic News*, $6.80; *Photography*, $3.50; *The Photographic Art Journal* (monthly) $2.80; *The Camera* (monthly), $2.80.

A Cheap Vertical Lantern.—Having occasion recently to make some slight study of cohesion rings and other phenomena where a vertical attachment to the lantern is necessary, and not wishing to go to the expense of purchasing one of the costly "brass and glass" variety, we succeeded, by the exercise of a little ingenuity, in making a very satisfactory substitute with a long cigar box, two mirrors, a condensing lens, and a lantern objective. The lamp in our optical lantern is a McAllister Bi-unial. Removing this from the lantern we measured the height of the flame center. With this as a guide, a sheet of plate mirror glass was mounted in the bottom of the cigar box at an angle of forty-five degrees, the center of the mirror being opposite the center of the flame. Above the mirror we mounted the condenser after having found its focal length. The objective was next mounted in the upper end of the box. To the objective a small triangular box was fitted to carry the second reflecting mirror. The front of the box was of course left open, and the angle of the back was exactly forty-five degrees. To the inside of the back a mirror silvered on the face was cemented, several trials having shown that with an ordinary mirror it was impossible to secure sharp definition owing to double reflection. A circular opening was made in the bottom of the box to take the lens hood. The apparatus was completed by cutting out the portion of the bottom of the cigar box above the condenser, and the addition of a series of cleats to the inside to carry the glass cells at different distances from the objective. A few hours' work completed the arrangement, and put us in possession of a vertical lantern which has been the means of opening up an interesting field of study. As the McAllister Lamp is inclosed in a sheet iron case there was no need of a lantern body. Any good oil lamp would answer almost as well, and no great constructive ability is required to produce this handy piece of apparatus.

Clearing and Reducing Bath.—One of the best is compounded as follows:

Saturated solution of white alum, ...	32 ounces.
Sulphuric acid, C. P., ...	½ ounce.

After the negative has been perfectly fixed, wash thoroughly, and then place in above solution for one minute, and rock gently. Then take out and wash again, and you will have a negative of the same appearance as a collodion plate, which will print after above treatment twice as rapid as it would otherwise.

For reducing use one ounce sulphuric acid, instead of one-half, and leave the negative in both not less than five minutes. There is no danger of blistering or frilling.

Eikonogen Developer for Instantaneous Exposures.—The following is recommended by the Eagle Plate Works:

Distilled water,	1 ounce.
Sulphite of soda,	32 grains.
Carbonate of potash,	12 grains.
Eikonogen,	12 grains.

Dr. C. L. Mitchell has withdrawn from the Blair Company, and is manufacturing a line of photographic specialties which are noticed in the Publishers' Department.

L'Amateur Photographe, in its issue of January 25th, announces the early publication of a new method of development by means of an entirely new substance which will speedily drive all other competitors from the field. We shall keep a careful watch on our French contemporary, and give our readers full particulars as soon as they reach us.

We regret to learn of the untimely death of the *Photographic Review*. Lack of support is given as the reason. Mr. Bolas, who was proprietor, printer, writer, and editor, labored hard to make the venture a success, and we had hoped that his gallant fight would be rewarded.

Our American lens makers would do well to imitate the example set by Messrs. R. & J. Beck, who are making lens mounts of aluminium in place of brass. An aluminium mount weighs less than one-half that of brass, and has the further advantage of being untarnishable. The cost is considerably more, but for those who use a battery of large lenses, would probably not complain of the enhanced cost in consideration of the great saving in weight thus effected.

Albumen Paper for Blue Prints.—Very pretty effects may be produced by printing on ordinary albumen paper sensitized with the following solution:

Citrate of iron and ammonia,	3¾ drams.
Dissolved in water,	2 ounces.
Red prussiate of potash,	2½ drams.
Dissolved in water,	2 ounces.

Mix equal parts just before using, as the mixed solution will not keep, and float the paper as on the silver bath, film down, for half a minute or so, and suspend by one corner in a dark room to dry. Detail can be brought out almost equal to silver prints, while the ease of working and the cheapness make it quite desirable. The prints can be mounted and burnished. Do not try to keep the paper sensitized, but make up fresh when wanted.—*J. T. M. in Scientific American.*

Ready-Sensitized Paper.—The convenience of having a stock of sensitized paper ready for printing at a moment's notice is not to be despised. While it is hardly possible to secure as good results on such paper as on freshly prepared, it is possible, by careful treatment, to make good prints on it. There are several available methods of keeping sensitized paper. An extremely good one is to keep the paper under pressure between sheets of blotting paper which have been imersed in a carbonate of soda solution and dried. Another plan is to introduce a preservative into the silver bath. Citric acid is commonly employed for this purpose, and the following formula is a very good one: Nitrate of silver, 2 ounces; distilled water, 20 ounces. Dissolve and add: Pure carbonate of soda, 60 grains; citric acid, 150 grains. Shake well, and filter. Float the paper for three minutes and blot off the silver solution. Before printing the paper should be well fumed.

Instruction in Photography.—The Art Academy of the Cincinnati Museum Association has arranged for a course of twelve lectures on Practical Photography to be delivered by Dr. Arthur LeBoutillier. This is at it should be, and we hope the time is not far distant when all similar institutions will include lectures on photography in their courses.

Tungstate of Soda Toning Bath:

1—Water,	16 ounces.
Borax,	20 grains.
Tungstate of soda,	75 grains.
2—Water,	4 ounces.
Chloride of gold,	4 grains.

Mix eight ounces of No. 1 with one ounce of No. 2, and allow the mixture to stand half an hour before using.

Combined Toning and Fixing Bath:

Water,	32 ounces.
Hypo,	8 ounces.
Chloride of gold,	15 grains.
Nitrate of lead (c. p.),	75 grains.

Gastine's Platinum Toning Bath:

Chloride of platinum,	15 grains.
Chloride of sodium,	60 grains.
Bitartrate of soda,	18 grains.
Water,	3½ ounces.

First dissolve the platinum and chloride of sodium, and bring the solution to the boiling point. Add the bitartrate slowly with constant stirring. This bath will keep, but it is to be diluted ten to twelve times with water for use. Purple black tones are obtained by a long immersion; for sepia tone less.

Eikonogen as a Fixing Agent.—It is stated that a plate left for twenty-four hours in the eikonogen developer will be as completely fixed as when the usual hypo bath is used.

Removal of Eikonogen Stains.—There is no question that a plain solution of eikonogen without sulphite will stain gelatine films. The stain is not necessarily permanent, however. It can usually be removed by prolonged soaking in water.

Mr. Sam C. Partridge, the popular dealer of the Pacific Coast, having found his rapidly growing trade too large for him to handle in his old quarters, has removed to No. 226 Bush Street, San Francisco. We wish him all success in his new quarters.

Agents for the Sale of the American Amateur Photographer.—We have received so many letters of inquiry regarding the possibility of obtaining monthly copies of the magazine through the dealers, that we are now making arrangements for that purpose. At present the following firms keep the monthly issues on sale:

BOSTON.—Barker & Starbird, Damrell & Upham, Dame, Stoddard & Kendall, Benj. French & Co., A. F. Boardman & Co.
BROOKLYN.—The Brooklyn Camera Co., C. E. Hopkins.
BUFFALO.—Tucker & Butts.
CAMBRIDGE.—Amee Brothers.
CHICAGO.—The Blair Camera Co.
CINCINNATI.—Sheen & Simpkinson.
DETROIT.—Allen Brothers.
LOUISVILLE.—W. D. Gatchel.
MINNEAPOLIS.—C. A. Hoffman & Brother.
NEW YORK.—Brentano's, the Obrig Camera Co., R. H. Moran, W. C. Cullen, Loeber Brothers.
PITTSBURG.—W. S. Bell & Co.

This list will be added to from month to month, and dealers who are willing to carry the magazine in large or small quantities are requested to write to the home office for terms.

The Kalotype Process.—The following are the formulas for the new kalotype printing-out process, as given by the inventor, Dr. W. J. Nichol, D. Sc., at a recent meeting of the Birmingham Photographic Society. The paper is coated with ferric oxalate, 5 per cent.; ferric tartrate, 5 per cent.; and, on exposure, the ferric salt is reduced to ferrous salt, and is then developed by floating on potassic oxalate, 10 per cent.; nitrate of silver, 1 to 2 per cent. Ammonia sufficient to clear. After development the print is washed in three baths of:

Ammonia, ...	1 ounce.
Citrate of soda	¼ ounce.
Water, ...	1 gallon.

Mr. C. A. Chandler, photographic editor of the Boston Globe, started on an extended trip through Cuba and Florida, March 1st. Mr. Chandler took with him two Kodaks and a Waterbury detective, and expects to return with some excellent negatives.

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

Lynn Camera Club.—With the opening of the club-house a bright future seems to have opened out before the club. The club is a member of the New England Lantern Slide Exchange, and recently spent an evening examining the set of the Boston Camera Club, which included eighty-nine slides, those made by Messrs. Latimer, Blake, Plimpton, Reed, Van Nostrand, and Briggs, being considered especially good. At the regular monthly meeting held Tuesday, February 4th, twelve new members were elected, and Mrs. Jeannette M. Appleton was transferred from associate to active membership. A committee of three was appointed to consider the advisability of placing a billiard table in one of the lower rooms of the building.

Buffalo Camera Club.—The first lantern slide exhibition of the season was given January 31st, at the club's new rooms, Hall's Gallery, No. 306 Main Street. The slides included Muskoka Lake views by Mrs. Hayes; English views by Dr. Bartlett; slides by Dr. Barton, Mr. Howard, and Mr. Hill, and a large collection of M. Levy's slides of the Paris Exhibition, contributed by Mr. Stark. Dr. E. L. Wilson, of *Wilson's Magazine* was present. There was a large attendance, and the exhibition was one of the best the club has given.

Marlboro Camera Club.—The regular meeting of Marlboro Camera Club was held on the evening of February 4th. The usual routine business was followed by discussion of forming club album of "Illustrated Marlboro," and two flash-light pictures were taken, which will be added to the "Flash-Light Album." Four associate members were admitted at last meeting, and several new applications were received.

Washington Camera Club.—At the annual meeting the following officers were elected for the current year: President, Dr. S. H. Griffith, U. S. N.; Vice-President, Max Hansmann; Secretary-Treasurer, R. Dickinson Jewett; Corresponding Secretary, J. Albert Cole; Board of Trustees, the President and Secretary-Treasurer, R. L. Fearn and Geo. A. Warren. The club is in a prosperous condition, and the Art Committee has completed the set of slides for "Illustrated Washington," which will soon be sent out on the road. Clubs wishing to be placed on the route-list are requested to communicate with the Corresponding Secretary.

Hartford Camera Club.—The annual meeting of the Camera Club, of Hartford, was held in the club rooms, Monday evening, February 10th. The minutes of the last meeting were read and approved. The club then proceeded to ballot for officers for the ensuing year with the following result: President, Dr. George L. Parmele; Corresponding Secretary and Treasurer, Edward H. Crowell (P. O. Box 480); Recording Secretary, Charles R. Nason; Executive Committee, Officers *ex-officio*, A. H. Pitkin, E. M. White, J. C. Hills, R. W. Curtis. Afterwards an informal discussion of the relative merits of pyro, oxalate, hydrochinon and eikonogen, as developers, was held, each of the members present giving his preference and reasons therefor. The preponderance of evidence was in favor of pyro, as an all-around developer, on account of the ease with which it can be controlled. Each of the others had its advocates, however, but more especially as adapted to some particular line of work. President Parmele then gave out "Lenses" as the subject to be discussed at the next meeting.

Old Colony Camera Club, Rockland, Mass.—Organized February 1, 1890, with the following officers: President, David Smith; Vice-President, Fred Ames; Secretary-Treasurer, Horace W. Studley, P.O. Box 210, Rockland, Mass.

The Photographic Society of Philadelphia.—The regular monthly meeting was held on Wednesday evening, February 5th. The Committee on Lantern Slides reported that preliminary arrangements had been made for a public lantern exhibition at Association Hall, Wednesday evening, March 12th. Dr. Charles L. Mitchell read a paper on "The Silver

Bath," and an interesting discussion followed, in the course of which several members gave their formulas for the sensitizing bath. Mr. Browne stated that after many trials he had found a process of preparing the silver bath which obviated all difficulty from discoloration. He had been using it since 1863, and it was yet as clear as crystal. It was made originally of seventy grains of nitrate of silver to each ounce of water. To every quart of silver solution, a half ounce of concentrated ammonia was added, which, of course, made a precipitate that was cleared up with solution of nitrate of ammonia; then an ounce of alcohol was added to a quart of silver solution. It seemed odd to put in so much organic matter as an ounce of alcohol, but the bath never discolored.

Dr. Wallace, as an old pupil of Mr. Browne, said he had worked on the same idea as Mr. Browne described, making a slight departure. He had used sixty grains, afterwards reduced to fifty, increasing the alcohol to 10 per cent. of the total bulk, and making an addition of alum as recommended by Mr. Anthony of New York. It had never discolored unless exposed to light immediately after paper had been floated upon it. The solution was always in order. In reply to a question of Dr. Mitchell as to the evaporation of the alcohol, Mr. Wallace said that when the bulk became reduced, alcohol was added.

Mr. McCollin exhibited Decoudun's Photometer, an ingenious device for determining the time of exposure, or testing the light-transmitting power of lenses. Several lantern slides were shown by Mr. Pancoast, who asked an explanation of the crystalline deposit present in the sky portions, but no definite conclusion was reached, and the matter was referred to the executive committee for investigation. A discussion of color-screens for orthochromatic plates followed, turmeric, picric acid, and aurine being recommended for different classes of work. In answer to a question by Mr. Pancoast, it was stated that the back lens of a Ross Portable Symmetrical Lens could be used singly without changing the position of the diaphragm.

The Camera Society of Bridgton, N. J.—Organized January 31, 1890. Rooms at No. 48 Commerce Street. Regular meetings, first Tuesday. Officers: President, Henry A. Janvier; Vice-President, Fred F. Smith; Secretary, Hugh L. Reeves; Treasurer, George Hampton. Membership, 15.

Jersey City Camera Club.—A public exhibition of lantern slides was given at the club-rooms, No. 4, Oakland Avenue, Thursday evening, February 13th. Many interesting slides were shown, including two of the audience which had been made from flash-light negatives early in the evening. The club was organized in May, 1889, and now has a numerous membership. Its rooms are commodious and well appointed, and are open at all times. Weekly meetings are held on Thursday evenings. The officers of the Club are: President, Emile W. Granart; Vice-President, Dr. J. P. Levering; Secretary, E. D. Bellows; Treasurer, Hugo L. Steidel.

The Society of Amateur Photographers of New York.—On Saturday evening, February 1st, the second smoking concert was given at the rooms, 122 West Thirty-sixth Street, which was largely attended and quite successful. Mr. James R. Stebbins, Jr., and Mr. A. L. Simpson furnished a part of the instrumental music, while Mr. E. Warrin entertained with lantern slides of his recent trip to Nassau, W. I. Excellent views by Mr. Wm. Murray and Mr. F. Vilmar were shown. Other artists were Mr. Frank Mora and Mr. Morris Phillips.

On Wednesday evening, February 5th, a special entertainment was given for the benefit of the society at Chickering Hall, comprising nearly one hundred slides of views of picturesque New York, by about twenty-three different members, and the same number of "Paris and the Exposition" by Mr. A. L. Simpson, made with a detective camera carried in a lunch basket. Many of his pictures were very cleverly caught, and he succeeded most admirably in evading the watch of the officers whose duty it was to prevent any photographing without a permit. Between the two different sets of slides was a musical entertainment (mostly instrumental) which was very well received. The hall was well filled with an appreciative audience. The proceeds will aid the society very materially in carrying out a few contemplated improvements. Rev. Dr. E. C. Bolles explained the views, and Mr. Wm. T. Gregg and assistant managed the lantern, projecting the pictures on a 25-foot screen. Much of the success of the exhibition was due to the excellent management of the entertainment committee, of which Mr. T. J. Burton is chairman, to Mr. A. L. Simpson, and the committee on lantern slides. All worked vigorously to present an interesting, varied, and creditable entertainment, which was not only well supported by the members themselves, but also by the outside public. Mr. E. Bartlett gave an organ prelude, and Professor Tibaldi played a beautiful solo on the mandolin, while other instrumental music was rendered by Signor Alessandro Bassi and Mr. Frank Mora. Signor Bassi sang a solo in place of the duet arranged for himself and Madamoiselle Coletti. An attractive souvenir programme, containing a historical sketch of the society, by Mr. C. W. Canfield, has been distributed among the members and their friends.

On Tuesday evening, February 11th, the society held its regular monthly meeting in the Chemical Lecture-Room of the Columbia College School of Mines, and was entertained by an illustrated lecture on Photo-micrography by Dr. L. H. Laudy. After explaining the wonders that micro-photography had revealed, he threw a number of lantern slides on the screen, and had two lanterns arranged (one worked by his brother and the other by himself) so that both disks overlapped each other. One was a lime-light lantern, and the other an improved electric arc light. The doctor, desiring to show the superiority of the latter, had the lime-light worked up to its brightest, and then threw a similar slide picture over its disk with the electric lantern. The effect was wonderful in completely absorbing and blotting out the lime-light picture, making the light of the lime-light disk that projected beyond the electric disk have the appearance of a very dull orange color. The lime-light has an estimated intensity of 750 candles, while the arc light was fully 2,000, amply sufficient to occlude the lime-light.

The projection of the original microscopic slides in a microscopic objective by means of the electric light, in all their original colors and a comparison with them of lantern slides made from negatives of the same subject, was very interesting. In some instances a great falling off in detail was noticed, because the peculiar color of the object was non-actinic. Several kinds of apparatus for the practice of photo-micrography were shown. Altogether a very pleasant and profitable evening was spent, and Dr. Laudy was accorded a unanimous vote of thanks.

On Friday evening, February 14th, a special exhibition of lantern slides, comprising the work of the Newark Camera Club and the Chicago Lantern Slide Club, was given at the rooms of the society, Mr. Beach, Mr. Warrin, and Mr. Tisdel operating the lantern. A majority of the work in the former club was made by one or two of its members. There were several views on the Moris & Essex Canal. Others which were especially good were "Fishing at Bogue Outlet, N. C.," "Eel Pots, Martha's Vineyard," "Pompton River, N. J.," "A Wet Snow," "Bloodroot and Moccasin Flower," all by Messrs. T. A. and C. G. Hine. Yachting views by the same gentlemen, picture of a dog "Towser," by W. A. Halsey; "Little Falls" and "Cohasset Pond," by Chas. Lervy; "Passaic Falls," by J. W. Simpson; "On Second River," by J. C. Vail. The slides as a rule were very creditable, varied, picturesque, and instructive. This new club starts out well, and will doubtless continue to improve.

Among the Chicago Club's views were many that were particularly good. Those of especial merit were three slides in the "Dells of Wisconsin," "Moonlight on Milwaukee Bay," and pictures of the St. Paul ice palace, by H. H. Bennett; "Moraine of the Muir Glacier," "Locks now being built on the Columbia River," and California natural scenery, by Dr. C. F. Matterson; "In the Calaveras Grove of Big Trees," by J. L. Atwater; "Street in Havana," by E. J. Wagner; "On Salt Creek near Riverside," and "In Lincoln Park," by E. P. Good; "Depression in Trade," by Mrs. N. G. Bartlett, a capital figure study; "Chicago River," by J. M. Forbes; and "Statue of Abraham Lincoln," by Robert Berger. The work of the club was fully equal to that of last year, and covered a variety of scenery and subjects that is peculiar to the Western country. The moonlight picture of Mr. Bennett was greatly admired.

Several interesting and picturesque views on Pocantico Creek, by Mr. C. S. McKeene, closed the exhibition which, as a whole, was most enjoyable.

It is probable that improvements will be made in the society's rooms, in the form of a spacious sky-light, that the members may practice portraiture more extensively. The lantern slide committee has introduced an arc electric light to be used for reducing lantern slides in the camera at night. Greater activity in this line may be expected. The society has effected arrangements with the Outing Company for the regular publication of its proceedings, which no doubt will be of interest to corresponding members and others. At the regular meeting on February 11th, Mr. Wallace Good Levison, of the Brooklyn Academy of Photography, will read a paper on the "Photographing of Self-Luminous Objects." An interesting paper will also be read by Miss Catherine Weed Barnes, and new novelties in cameras will be exhibited.

Milwaukee Camera Club.—This new club was organized January 3d, and an entertainment given at the Atheneum on the same evening, consisting of an address by the President, Mr. Thomas Spence, a lantern-slide exhibit by Mr. J. B. Bangs, a paper on photography by Mr. Howard C. Tilton, and musical selections by Prof. Thomas Filmore and Mr. Robert Shape. We wish the new club a long and successful career.

Cornell Camera Club.—The officers for the following season are: President, R. M. Charnat; Vice-President, C. B. Brun; Treasurer, S. J. Larned; Secretary, J. F. Skinner.

Cincinnati Camera Club.—A special meeting was held on February 18th for the exhibition of the set of slides made by the members of the Louisville Camera Club. The Club Exhibition of Lantern Slides has been postponed until the first week in March. A series of lectures on Photography for the benefit of the new members of the club is announced, the date of the first lecture being March 3d.

Lynn Camera Club.—Seventeen new members were elected at a recent meeting and the limit of one hundred will soon be reached. At the regular monthly meeting Mr. Milburn, of the Eastman Company, demonstrated the method of daylight enlarging on bromide paper and exhibited the new Kodaks which were greatly liked. At the Lantern Slide meeting the Providence and New Britain slides were exhibited to an appreciative audience.

The New York Camera Club.—A special exhibition of lantern slides, called "The Experiences of an Amateur Photographer on the Nile and in the Desert of Sinai," was held at the rooms of the club about the 12th of February and a lecture by Prof. H. Carrington Bothen. It was greatly enjoyed. On Monday night, February 17th, "Flash Light Photography" was the subject of a conversational meeting, and on Monday the 24th an informal exhibition of a large number of hand cameras was given. Mr. A. D. Fisk has been engaged to take charge of the lantern at all future exhibitions.

Portland, Maine, Camera Club.—This newly organized club is, we believe, the only camera club in Maine. It starts out with a membership of fifteen, and Messrs. F. H. Little, P. G. Brown, and F. M. Lawrence will fit up a dark-room in the Art Building.

Boston Camera Club.—Three lantern slide exhibitions have been given by the club recently. The first on Monday evening, February 10th, comprised two sets of the New England Lantern Slide Interchange, the work of the Waterbury and New Britain (Conn.) Clubs. The set contributed by the Waterbury Club as a whole was of fair technical quality and contained a few slides deserving of special mention, the best being "Naugatuck Valley," "Old Mill," "Evening on the Naugatuck," "At Greystone," "A Letter from the Boy," "Sunset at Twin Lakes," "Thorp's Lane," "Who's Afraid of You?" "Trinity Church," "The Hospital," "Hurdle Race," "Saranac River," "At the Well," "Pasture Land," and "Genesta." The set consisted mostly of views in and around Waterbury. The New Britain set included a number of Mexican views with descriptive text, and views in and about New Britain. This was the club's first attempt at slide making, and the slides were faulty both artistically and technically, being inclined to chalkiness and hardness. Exceptions to these strictures must be made for the "Former Residence of Cortez," "Canal with Bridge," "View on Main Street," and "Yacht Sparkle," which were very good.

On Friday evening, February 14th, the Pacific Coast Amateur Photographer Association set was exhibited. This set was called "Glimpses of California," and was much enjoyed. Mr. Chas. H. Currier gave the descriptions.

On Friday evening, February 21st, the new set of the club, "The White Mountains of New Hampshire," with descriptive text by the Rev. W. F. Dusseault, received its first presentation and delighted a large audience.

Worcester Lantern Slide Club.—An interesting series of views was presented to an appreciative audience, Monday evening, February 17th. The slides, which numbered nearly two hundred, were in part contributed by the Boston Camera Club, the balance being the work of members of the Home Club.

Springfield Camera Club.—At the regular monthly meeting, Wednesday evening, February 19th, the slides of the Lynn Club were exhibited, the most interesting being those views taken during the recent fire and of the ruins afterwards.

Mystic Camera Club.—The club held its first annual exhibition in Legion of Honor Hall, Medford, Mass., February 17th, 18th, and 19th, and it proved a greater success than had been anticipated. The twenty-two members of the club contributed six hundred pictures and an album containing two hundred views among the Middlesex Fells. The attendance throughout the exhibition was large, and the uniform excellence of the exhibits was favorably commented on. The first evening the club held an informal reception for its specially invited guests. After a few words of welcome by the President, Mr. George E. Davenport, the guests were entertained with a few choice musical selections followed by an exhibition of lantern slides, this latter feature proving so popular that it was repeated on the two succeeding evenings. The slides were made by the members, and were very creditable productions. As we have said, the average merits of the exhibits was very good, and we regret that the limits of our space forbid individual mention of them. Wednesday morning Mr. Davenport made three excellent views of the hall and exhibit which show the walls to have been well covered with pictures.

The Brookline Camera Club.—There have been three regular meetings since the last report. At the first meeting only a few were present owing to a disagreeable snow storm. At the second a somewhat lengthy discussion with regard to some proposed changes of the constitution took up part of the time. Messrs. H. R. Robinson, E. E. Truette, and Miss Helen Richards, were appointed as a committee of arrangements for the first public exhibition of the work of the club which will be held in the rooms of the club, March 17–20. A circular has been sent to each member requesting contributions of his or her work, and a fair sized exhibition is anticipated. There will be two prizes, for the best and second best photographs, the club voting by ballot on the relative merits of the pictures. The first prize will be "Wilson's Photographics," and the second a year's subscription for the AMERICAN AMATEUR PHOTOGRAPHER. At this meeting Mr. E. E. Truette read a humorous description of a trip made by three of the members, entitled "The Three J.'s," and Mr. Lee took a flashlight picture of the members who were present. The third meeting was well attended and after the regular business, Mr. H. R. Hallett (President) gave a very interesting exhibition of lantern slides, illustrating the Paris Exposition. Some sixty slides were shown and gave great pleasure to the club.

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CORRESPONDENCE.

MR. HARBORD'S LETTER.

To the Editors of the American Amateur Photographer:

DEAR SIR,—In answer to a letter of Mr. D. Harbord in your January issue, I shall feel obliged if you will do me the simple justice of printing the inclosed *facts*. I make no comments, but leave it to your readers to form their own opinions. This person writes:

"I particularly remember one of those scathing, scalpel-like criticisms, in which the Doctor excels, of one of his own great (?) 'naturalistic' pictures. . . I allude to an *awful abortion* representing a man plowing up-hill with a pair of horses. The man's foot was as long as the horse's head, and the whole picture so gloriously 'naturalistic,' *i. e.*, 'fuzzy' or 'focused with judgment,' that it was *denounced as an imposture*." (Italics mine). Now, sir, this very picture I only exhibited *twice*. Once at the Amateur Photo Exhibition held here in London in April and May, 1886. The judges were Captain Abney, Sir James Linton, President of the Royal Institute of Oil Painters, and Mr. Thomas Ford, Royal Academician. It was entered in the "Country House" class, for the best and second best outdoor group, studies of animals, sporting scenes, tennis and other parties." It was awarded the second prize, a *silver medal.* A bronze medal was awarded to a Mrs. Davidson on a cut of her making to use for another series. Amongst the competitors in this class were such names as De Lara Cohen, J. C. Oliver, O. Alabone, H. Mansfield, Paul Lange, H. J. S. Williams, Hon. J. Verekar, E. Parker, C. E. Nesham, C. Sinclair, Dr. Hale, and others, all more or less known workers.

The *London Stereoscopic Company* selected and published those pictures they considered the best ones of the various classes, and the plowing picture was one of the selected and published, though they clouded it falsely. The editor of the *Camera*, Mr. J. C. Hepworth (now one of the editors of the *Amateur Photographer*), published a wood-cut of it in his paper, the *Camera.* Mr. V. Blanchard told me one day, at a jury, that he considered it one of the most artistic photographs he had ever seen. In the spring of 1887, I exhibited it at Nottingham, in the Figure Subject Class. It was awarded the second prize, a bronze medal, Mr. Adcock taking the first, and Messrs. Bicknell & A. Keigbly the third and fourth prizes, the certificates. I append a few of the press criticisms written *at the time* upon the "*imposture*," and leave your readers to discover the impostor, who is a mere nobody, and who was long ago consigned to a well-merited oblivion which even *his* busy-body character could not break through:

"Among the other examples strangely interesting from their unusual merit, are 'A Stiff Pull.'"—*The Queen.*

"Mr. Emerson has also been fortunate enough to gain the silver medal in the country horse-class, for a very spirited study of plowing."—*Topeal Times.*

"To Mr. Emerson's picture, 'A Stiff Pull,' a silver medal has worthily been given. This is a very artistic production. The horses are tugging the plow up hill, and the plowman is pushing with all his might to help them in their labors. The clouds aid the composition by carrying the eye to the extreme right of the picture, which is the summit of the hill so eagerly sought for by both horses and man. The whole is a most successful production of difficult action, and is one of the most striking pictures in the room."—*The Camera.*

"P. H. Emerson's delightful platinotype picture 'A Stiff Pull,' which worthily deserves the silver medal awarded to it."—*The Artist.*

"Another silver medal for 'A Stiff Pull,' where there is delicious sense of air and humidity, as well as beautiful tone and clearness without hardness."—*The Bazaar.*

"This picture ('A Stiff Pull'), though not technically perfect, is very artistic. There is a great deal of 'go' in the old plowman breasting the hill with his team; and though out of focus, the whole picture is full of life and vigor, and is on the whole, while by no means a bad photograph, a very good picture."—*Amateur Photographer.*

I may add the picture has been most highly spoken of since, for it is one of the best plates in my work "Pictures of East Anglican Life."

Yours faithfully, P. H. EMERSON, B.A., M.B. (Cantab.).

P. S.—I never took two women in a fog, apparently looking for something they had lost, and I have always given my pictures names. I never took a woman "gathering," who suggested a wash-tub. Mr. Davison is in good company. Cout began with sharp work and *developed* to broad work; D. Harbord calls it coat-turning, a veritable Philistinic simile, and worthy of this photographic hop-o-my-thumb. It is significant how silent all those reptiles are upon the work, "Life and Landscape," that I did in *partnership* with one of our best landscape painters. When D. Harbord and others get a good painter to publish a joint-work with them, *then*, and not before will I condescend to discuss art with them; by that time we should have few differences.

DR. EMERSON'S CRITIQUE.

To the Editors of the American Amateur Photographer:

The letter signed "D. Harbord," printed in your January issue, is apparently dictated by personal animosity against some individual or individuals of naturalistic tendencies. It seeks to discredit the view taken of artistic focus by Dr. Emerson and by those who in the main have held the same opinions. It would be interesting to know what D. Harbord's qualifications are for discussing any photographic *art* question, also what are the motives which actuate him in using such an absurd expression as "turncoat" in a matter purely one of education. First of all it ought to be settled who "D. Harbord" really is. Our only option on this side is to suppose that he is the gentleman who has distinguished himself by diluting your Mr. Beach's developer and by unusual and frequent success in securing several exposures upon one plate. His sudden appearance upon the American stage is surprising. Here he has been long dead, except so far as anonymous letters may be concerned. He seeks to anticipate retort by a confession that he has never exhibited his own photographs. Such a ruse will deceive no one as to the real reason for his abstention from showing his work.

"D. Harbord" wishes it to be inferred that Dr. Emerson is in a conspiracy with other amateurs to prop one another up. The very letter against which he rails is his absolute refutation. In that letter Dr. Emerson brought his best judgment to bear impartially, certainly as far as those of the same way of thinking as himself are concerned. It may be irritating to a good many to have faults of which they are conscious, publicly and severely pointed out, but that is a punishment which Dr. Emerson himself and every other exhibitor has had at some time to bear. Dr. Emerson further has proved himself almost the only competent art critic amongst photographers that we possess. It will be known to yourself and to some of your readers that Dr. Emerson's letter criticising the pictures at the Pall Mall exhibition was copied in full in the *Amateur Photographer* on this side, and that letters assailing the criticism were freely admitted. It ought, in justice to Dr. Emerson, to be known that correspondence in support of his judgment was declined, and only one side allowed to be heard, a regrettable case of journalistic unfairness.

"D. Harbord" says "Anything more silly than his laudation of Mr. Davison's pinhole pictures could hardly be conceived." He does not even say this is simply his opinion. With your knowledge of the respective qualifications of Dr. Emerson and D. Harbord you will readily see on which side the "silliness" lies. It matters not to a disingenuous opponent that there was no "laudation," only a qualified approval, and that the general opinion amongst those whose work proves that they have some insight, is that the softness of focus in pinhole work is artistic, and that it is a similar effect to that felt by the majority of trained painters as giving the truest and most poetical rendering of natural scenes. My own opinion is that in the particular landscapes quoted, the diffusion is the most suitable focus that could have been applied. Pinhole focus gives up much of the power of relief required for certain subjects by giving practically equal focus in all planes, but it is applicable in many cases of pure landscape and is greatly superior to the common and ignorant use of corrected and stopped down lenses.

D. Harbord can do better service by watering other people's developers than in meddling with matters for the discussion and appreciation of which he has no aptitude, natural or cultivated.

Yours, etc., G. DAVISON.

London, February 8, 1890.

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912 ARCH STREET, PHILADELPHIA, Pa., January 28, 1890.

The Eastman Company:

Gentlemen,—The silver cup, as prize for bromide enlargements entered for competition at the Boston Convention, duly received, and is pronounced by all our friends "a perfect beauty." Please accept our thanks for what we consider an evidence of your good-will as much as of your sense of justice.

We fully understand that the Eastman Company was in no wise responsible for the equitable disposal of the "prize" cup, after its having been placed in the hands of the officers of the P. A. of A. for award for the best work, and its having been given to another party, contrary to the vote and protest of the judges appointed at the convention, was of course no fault of yours.

Hence we consider that in making good the award of the judges by sending us this "special cup" you are evincing to the photographic fraternity, as well as to us, a spirit of generosity as well as a strong desire for "fair play" in convention awards.

Yours respectfully, ROTHINSATTER & DILLON.

QUERIES.

17.—What is the cause, and what the remedy for staining of negative films developed with the Newton combined eikonogen and hydrochinon developer as given on pages 30, 31 of January number?

S. C.

18.—Why do not the different makers of plates number the sensitiveness of the plates alike? Some use 20 to 27, others 25 to 40, etc.

A. M. G.

ANSWERS.

17 —Some brands of plates are more liable to this trouble than others. We have not met with it. Try soaking the films in alum solution made acid with sulphuric acid.

18.—Because they do not adopt the same standard. Each plate-maker seems to have a different method of testing the sensitiveness of his emulsions, some merely guess at it.

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BOOKS AND EXCHANGES.

NATURALISTIC PHOTOGRAPHY. By P. H. Emerson, B.A., M.B. Second Edition. Sampson, Low & Co., London, 1890.

Probably no book on photography has been more severely criticised than this of Dr. Emerson. Its appearance, less than a year ago, speedily divided English amateurs into two camps, and aroused a bitter controversy whose echoes are still heard. Unlimited abuse has been showered upon the book, and its principles have been ridiculed and scoffed at.

It may be said at the outset that "Naturalistic Photography" has the merit of decided originality, that its author has the courage of his convictions, and that he has given us a book which is well worth reading. The technical treatment is, in the main, admirable and almost above criticism. It is on the artistic side that the book has been most fiercely attacked by the Robinsonian school of photographers. The editor of an influential American photographic journal has recently stated that there are no followers of the naturalistic school in America, and that none are wanted. He may be right in his statement, but before condemning naturalism in photography, it might be well to understand the meaning and application of the term. Dr. Emerson uses it as a synonym for impressionism, and defines it as an attempt to give a true and natural expression of an impression of nature by an art. Naturalistic photography is, therefore, photography used to translate impressions of nature into visible forms. This being so, we see no reason for attacking those who prefer naturalism to realism. It is purely a matter of individual taste and preference. Photography is an art of expression, and the visible expression of individual impressions of nature have a value and a place in photography as in literature. There is ample room in photography for the realist and the naturalist. The former is more scientific than artistic, to be sure, but he is not, therefore, to be ruled out of court any more than is his naturalistic brother who prefers to render nature according to his impression of her. Abuse is not argument, and it is greatly to be regretted that so many hard words have been freely used in the controversy anent "Naturalistic Photography." Those of one bent of mind will range themselves under one banner, and those whose mental bias is in the other direction will fall into the ranks of the other party. Impressionism will always have its followers in photography as in art, and we need not wish it otherwise. The thoughtful mind will find much in "Naturalistic Photography" to reward its reading, even though its principles and teachings may not be accepted.

The Practical Photographer is the name of a new monthly journal, published by Percy Lund & Co., Bradford, England, for free distribution. The January and February numbers contain a goodly amount of valuable photographic matter, and the magazine will doubtless prove a welcome addition to the long list of photographic journals. We must deprecate the growing practice of issuing advertising sheets, on account of the effect they must have on the regular magazines which depend largely upon their subscription-list for their support.

The Camera, now in its fourth volume, contains in its monthly issues much interesting matter, and is one of the best of our exchanges.

Messrs. Loeber Brothers' *Photographic Herald* is on the upward grade. With the February number it assumes a new and pleasing dress, and gives several interesting articles.

The Photographic Art Journal is soon to publish a photo-gravure from a plate etched by Dr. P. H. Emerson, our English correspondent. The *Art Journal* should be more widely known in America, and we shall be pleased to receive and forward subscriptions for $1.00.

One of the brightest and newsiest of our contemporaries is the English *Photography*, which has recently enlarged its number of pages, and celebrates its first birthday with an edition of five thousand copies. Its articles are written by such well-known workers as Capt. Abney, Andrew Pringle, George Davison, and are always reliable and helpful. It is about the best English publication for the American amateur, and we have made arrangements to furnish it to our subscribers, both old and new, at $1.60.

Another excellent English publication is *The Photographic Art Journal*, an illustrated monthly of a high order of merit. We will supply it for $1.00.

From the Scovill & Adams Company we have received a bound volume of the *Photographic Times* for 1889, which is filled with a wealth of good things; a quaint and attractive dial calendar in colors and framed in oak, and an author's copy in blue and gold of the *Times Annual* for 1890.

Mr. F. Gutekunst, Philadelphia, sends a collection of his reproductive work, which shows him to be well in the front of our American process workers.

Dr. C. L. Mitchell has written a pamphlet on "Flash-Light Compounds," which sounds a timely note of warning against the use of any of the explosive mixtures now so freely offered to the amateur. Pure magnesium powder gives a sufficiently actinic light and is free from danger.

From the publishers, Messrs. Fuchs & Lang, New York, we have received a copy of the second revised edition of Leslies' Practical Instructor of Photo-Engraving and Zinc Etching Processes, which contains moderately full instructions for the "Wash-Out," "Swelled Gelatine" and "Zinc Etching" processes with explanations on making and photographing the drawings. The section on "Tints and Shading" is a valuable feature and the detailed instructions are practical and simple. The book, however, has the fault common to most books of its class in that it gives no detailed information regarding the making of the grained screens necessary for half-tone work. Price $1.00.

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FOREIGN NOTES.

Darkness of Skies in a Photograph and How to Measure it.—Captain Abney contributes an interesting article on this subject to photography for January 2d, of which the following is a condensation. Blue sky should be represented in a print by a gray, never by white. The method is designed to give absolute measurements of the gray which represents a blue sky. The standard of measurement adopted is that obtained by combining black and white together by a rotating arrangement. Since the different printing processes render different values of white and black it is necessary to start with a specimen of the paper to be employed. Captain Abney's experiments were performed with platinum paper. A strip of the paper was exposed sufficiently to give the most intense black possible and developed as usual. This blackened strip was mounted on a piece of thin card-board and a disk about six inches in diameter was cut out. A similar disk of the white paper used in the platinotype process was cut out and slipped over the other. To enable this to be done it is necessary to cut slits from the center of each of the disks to the edge. The two disks may be mounted on a common toy spinning top such as is sold for the recombination of colors. When the top is set in motion the combination of the black and white produces the gray standard sought. To form a scale of comparison, platinum paper is exposed behind a swinging pendulum carrying a mask and a slit through which the light passes. The positions of the match between the grays thus formed and that formed by the rotation of the black and white disks is readily determined for fixed amounts of white, and the scale thus formed which may be used to determine the amount of gray in different parts of a print. As the result of several comparisons, Capt. Abney estimates the amount of white in a winter sky is about 40 per cent.; a clear blue summer sky, 83 per cent.; a deep blue sky contrasted against snow, 67 per cent., and an English summer sky with clouds, 70 per cent.

Dry Plates for Photo-Mechanical Work.—Prof. W. K. Burton, writing on this subject in *Photography* details the result of his experiments with plates thinly coated with slow emulsion such as is commonly used for lantern slides, and recommends the following formula for the emulsion:

No. 1—	Bromide of ammonium,	100 grains.
	Iodide of potassium,	8 grains.
	Gelatine (soft),	32 grains.
	Water,	4 ounces.
No. 2.—	Nitrate of silver,	160 grains.
No. 3.—	Gelatine (hard),	120 grains.

No. 1 is to be raised to a temperature of 120 degrees Fahrenheit, and No. 2 is added (dry) with constant stirring for several minutes. No. 3 is then added dry and the mixture melted, after which it is set aside to set and then washed as usual.

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Index to Current Photographic Literature.

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Gelatine Plates for Photo-Mechanical Work; Ibid, January 23d.
Pepairing Broken Negatives; The Photographic News, January 10th.
Purpose in Photographic Work; Ibid, January 24th.
Photography in Relation to Meteorological Work; British Journal, January 3d.
The Acid Fixing Bath; Ibid, January 17th.
The Development of Gelatine Lantern Slides; Ibid.
Testing the Rapidity of Dry Plates; Anthony's Bulletin, January 11th.
Toning and Toning Baths; Ibid, January 25th.
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Eikonogen as a Developer; Photographic News, January 31st.
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The Action of Light on Chloride of Silver; British Journal of Photography, January 31st.
Photography as a Business; The Practical Photographer, January and February.
Lantern Slides; The Camera, February.
The Salting and Exciting of Drawing and Other Commercial Papers; Ibid.
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Density in Negatives; Photography, February 6th.
Outlets for Photography; Wilson's, February 15th.
Side-Light Portraiture; Photographic Times, January 24th.
Home-Made Trays; Photographic Times, February 14th.
How to Recover Metallic Platinum; Photographic Times, February 7th.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

Mr. W. H. Walmsley, whose magnificent photo-micrographs, are the despair and the envy of those who strive to imitate his work, has favored the editorial sanctum with a few specimen prints and lanterns slides, all of them of a high order of excellence. The print of the "Wing of the Mosquito" and the slide of the "Sun-Ray Diatom" are as fine examples of photo-micrographic work as we have seen.

C. H. Codman & Co., Boston, are trade agents for a new developer, of French origin, called the "Tondeur." It is said to be a concentrated form of hydroquinone and eosine. The ingredients of the developer are put up in powdered form in sufficient quantity to make forty ounces of solution, and we have found it to work very satisfactorily, giving detail and tonality to a remarkable degree. The mixed solution is said to keep well, but we have not had an opportunity as yet to test the truth of this assertion as our solution has been made up only a short time. We are not certain what the function of the eosine may be, always supposing there is any present, but it may have a tendency to promote clearness and to preserve the finer gradations.

We have received a neat little brass plate having curved and straight edges, with one face covered with light lines and squares, from Bain & Co., St. Louis, Mo., invented by Mr. R. E. M. Bain and called Bain's Universal Mat Trimmer. By taking a piece of paper the size of a lantern-slide plate and folding into a square, then putting on the plate and trimming around the edge of the plate with a pair of scissors, a square, oval, or circular aperture is quickly cut out. It is a very useful article for the amateur, since a mat of any desired shape or size can be easily made and at much less expense than the regular mat now on sale. In his circular Mr. Bain speaks of the costly nature of lantern-slide mats now supplied by stock dealers and says, "As the mat very often has a great deal to do with the artistic effect of the picture on the screen there has been a growing demand for some device for making mats which would suit the slide." The low price of the plate and its simplicity will command for it a large sale.

We have recently had an opportunity of testing several of Dr. C. L. Mitchell's photographic specialties to which the name of Standard has been given. Our tests included the hydrochinon and eikonogen one-solution developers, and the sulpho-pyrogallol two-solution developer. In our hands they all gave fine results, and we believe that they well deserve the name of standard. The eikonogen solution is to our thinking the best of the three.

Messrs. Barker & Starbird, whose new announcement appears in its proper place, recently sent us a box or two of their Chautauqua plates for trial. They were used mostly for flash-light exposures in the Bromfield Hand Camera, and developed with the firm's "Our Own" hydroquinone developer, and the results were uniformly of a high order. The plates develop cleanly and softly with all the brilliancy that can be desired, and we believe the Chautauqua to be a good plate for rapid work.

From the John Wilkinson Company we have received a sample package of Hope's salted paper. This is a plain paper for mat surface prints. The paper is heavy enough to be used for book illustrations, and when printed with margins the prints are very effective. We have had good results with the paper, which, with proper manipulation, is capable of giving strong and pleasing prints.

From Barker & Starbird comes one of their Eurygraph lenses with Iris diaphragm, a thing of beauty, and, so far as we have had an opportunity of testing it, a lens which will compare favorably with any lens in the market. It covers well the size of plate for which it listed, gives excellent definition and good depth of focus. It is well corrected and has good illuminating power. Its merit should give it a large sale.

Messrs. Bausch & Lomb send one of their new Clark lenses which is claimed to possess the characteristics both of the wide-angle and the rectilinear. When used with a medium stop on the largest plate the lens is listed to cover, the included angle is fully ninety degrees, and there is much less distortion than is commonly found in wide-angle lenses. As the lens can be used with a larger opening than most wide-angles, there is a consequent gain in speed. The lens cuts sharply and gives an evenly illuminated field with little, if any, falling off at the edges of the plate. We think that the Clark will make a good record during the coming season.

From Allen Brothers we have received a leather-covered box, 2½ x 2½ x 7 inches, containing the new Suter Lens System. In this system, combinations which would ordinarily require seven tubes and twelve lenses are condensed into two tubes and five lenses without seemingly any sacrifice in working quality. In the rectilinear system three combinations of 6¼, 8½, and 9½ are possible, covering plates from 5 x 7 to 7 x 9, with an angle of about 60 degrees, and working at F. 6, F. 7, and F. 8, respectively. The wide-angle combinations work at 6¼ and 7½ inches with an angle of 90 degrees. In addition two single landscape lenses of 12½ and 17½ inches focus are obtainable, covering plates 10 x 12 and 12 x 10. Our tests, so far have been confined to the wide-angle system, which we have found to equal any of the regular wide-angle lenses. We shall test the other combinations and give the results in our next issue. The price of the combination is $75.00, and we should say that the money would be well invested.

W. C. Cullen has recently moved into a larger store on William Street, opposite his old stand, No. 62. Being near Wall Street and having dark-rooms fitted up for the convenience of his patrons, he has built up a large trade among Wall-Street brokers, insurance men, and bank clerks.

United States Photographic Patents

Issued in December, 1889; January and February, 1890.

DECEMBER 31, 1889.

418,318—Camera Shutter; T. O. Hegg, Madison, Wis.

418,343—Photographic Camera; Carl P. Stirn, New York, N. Y.

JANUARY 7, 1890.

418,674—Method of Manufacturing Transparent Patterns; J. Baynes, Westchester, N. Y.

418,675—Direct Printed Adhesive Negative; J. Baynes, Westchester, N. Y.

418,764—Photographic Camera; C. R. Smith, New York, N. Y.

419,006—Camera Stand; E. C. Fisher, Claremont, N. H.

419,105—Photo-Plate Holder; J. Barnett, New York, N. Y.

JANUARY 14th.

419,360—Photographic Printing Frame; Louis Rouillion, Ithaca, N. Y.

419,505—Photographic Plate Holder and Mechanism for operating the same; Alexander Dom, Mt. Healthy, Ohio, and C. H. Sheen, Cincinnati, Ohio.

JANUARY 21st.

419,910—Photographic Camera; L. M. Berthon, the Castle of Asseiux, near Roussilon, Isére, France.

JANUARY 28th.

420,130—Flexible Photographic Film; W. H. Walker and G. Eastman, Rochester, N. Y.

420,355—Photographic Dipper; E. W. Perry, Jr., New York, N. Y.

420,373—Salt of Ammonium Beta-naptho hydroquinone-beta-sulphuric acid; O. N. Witt, West-end-Charlottenburg, near Berlin, Germany.

FEBRUARY 11th.

421,266—Album or Picture Exhibitor; E. S. Glover, Battle Creek, Mich.

421,267—Album Stand or Holder; E. S. Glover, Battle Creek, Mich.

FEBRUARY 18th.

421,436—Photographic Camera; P. E. Rudell, New York, N. Y.

421,484—Camera and Electrical Flash-light Attachment; G. E. Davis, Dubuque, Iowa.

* * * *

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SALE AND EXCHANGE.

[This department is for the benefit of SUBSCRIBERS who have photographic material, apparatus, or books, which they wish to exchange, and such wants will be inserted free of charge. The number of insertions given will depend upon the number of exchanges received each month. Subscribers will please notify us when articles have been exchanged or sold.]

Wanted—Back Numbers of the American Amateur Photographer. Address this office.

For Sale—Tisdell & Whittelsey 3¼x4¼ Detective Camera, 12 holders. Used but little; good as new. Need larger box. Price, $15.00; cost, $23.50.—W. H. Spangler, Jr., Dover, N. J.

For Sale—French Oil Stereopticon, 4½ inch compound condensing lenses. Cost, with folding tripod stand, made to order, $65. Will sell for $30, cash.—S. J. H., No. 2 East Fifteenth Street, New York City.

For Sale—Kodak Camera, as good as new; price, $15.00. Rochester "New Model Improved" Camera Box, with plate holder 5x8 size, $8.00; also Darlot Lens, for 4x5; $3.50.—E. H. Richards, 25 Fairmont Street, Woburn, Mass.

Wanted—A lens of four inches focus, or less, that will cover a 3¼x4¼ plate, with large stop.—W. G. Fargo, 103 East Avenue, Jackson, Mich.

Wanted—Camera (detective) with good lens, and in prime condition, size 4x5 plates. Anthony or Scovill preferred.—A. L. Fogg, Agent Adams Express Co., Cincinnati, O.

For Exchange—Lilliput Detective or good English Compound Microscope for Kodak or other Detective Camera.—Address J. M., P. O. Box 3413, New York City, N. Y.

For Sale or Exchange—A 5x8 Blair Camera, three lenses and complete outfit, cost over $100, for gold watch, safety bicycle, or cash.—J. F. J., Box 109, Boston, Mass.

For Exchange—A 2¼ "Back-Geared Lathe" and a good microscope, for a Morrison Combination Wide Angle Lens 6½x8½.—J. Harvey, 610 East Avenue, Roanoke, Va.

Exchange—Canvas carrying case, as good as new, used only one day, cost $5.00, of Scovill Manufacturing Co. Inside measure, 13 inches long, 7 inches wide, 10 inches high; in exchange for either "Daisy," Triplex or any good tripod for ⅝ camera or for good dark-room light.—Fred C. Gleason, Warren, N. H.

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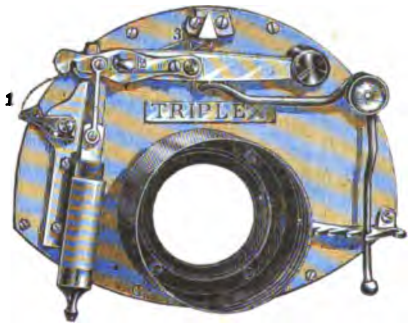

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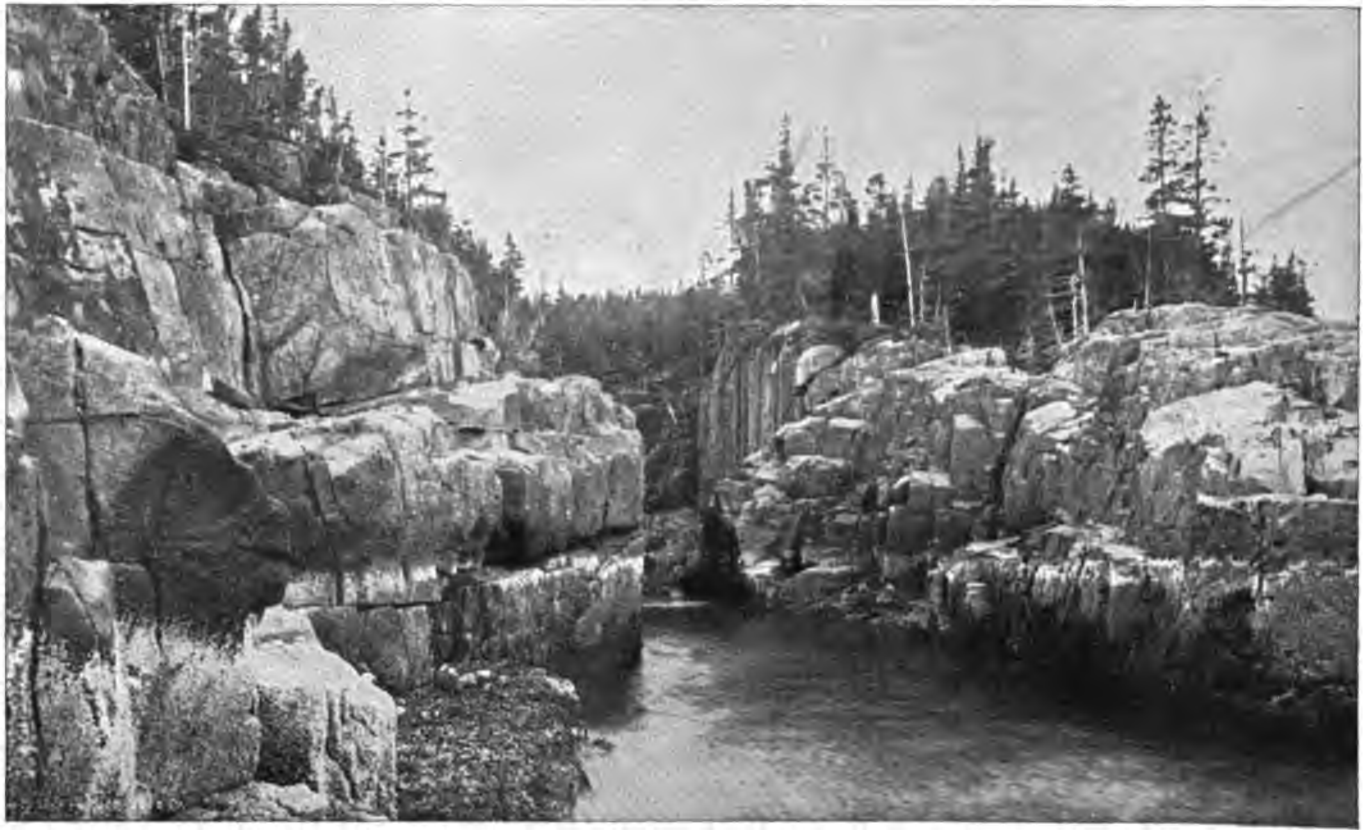

Wilfred A. French.

Iron-Bound Island.

THE [illegible]

AMATEUR PHOTOGRAPHER

[illegible]

[illegible] of the [illegible] of [illegible] We were aboard the [illegible] Wilhelm [illegible] of [illegible] West Indian Mail Steamers from Amsterdam [illegible] New York [illegible] of the Dutch, the steamer [illegible] Holland [illegible] guava jelly, being one of [illegible]

[illegible] after leaving [illegible] town of [illegible] of the [illegible] Venezuela [illegible] small amount of [illegible] to put ashore and [illegible]

THE AMERICAN
AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., APRIL, 1890. No. 4.

Our Illustration.

DOUBTLESS many of our readers are familiar with the scenery of the Maine coast, which is remarkable for its rock-bound character. This is especially true of the coast in the vicinity of Mount Desert, where Mr. French's negative of "Iron-Bound Island" was taken. We are fortunate in being able to give our readers such a striking and characteristic bit from "Down East." To some it may recall the memory of pleasant summer days spent on the fairy island. To all it will serve as an example of careful photographic work. The Ives block was made by the Boston Photogravure Co., and the prints are from the Lewiston Journal press.

◆

A Trip to the Windward Islands, the Spanish Main, and West Indies.

BY GEORGE BULLOCK.

[Continued from page 86 of No. 3.]

IT WAS late in the afternoon when we passed out of the Bay of Paria, through the Boca del Dragon, and were once more out on the Caribbean Sea, enjoying on deck the cool breeze that we had missed so much at the Port of Spain. We were aboard the Prince William, one of the Dutch West Indian Mail Steamers from Amsterdam for New York. Characteristic of the Dutch, the steamer was neat and clean, and the table very good, genuine Holland cheeses, served with guava jelly, being one of the delicacies.

The following morning after leaving Trinidad we awoke to find that we were at anchor off the town of Campano, one of the small Venezuelan seaports. We had a small amount of freight to put ashore and very little to come aboard—a few bundles of hides and a hundred or more sacks of cacao. We could have been off again on our way within a couple of hours, but the arrival of a steamer at one of the small Venezuelan ports is the event of the month, and after you once drop your anchor they are in no hurry to let you get away, and it is necessary to submit to a great deal of red tape. We were not permitted to go ashore, but the steamer was visited by several rather interesting natives, in the persons of the quarantine and custom officers, together with the harbor master and a few privileged friends, who were rowed out to our anchorage in a six-oared barge. The captains of these steamers find it policy to treat these important officials with a great show of politeness and liquid refreshment, and in that way hasten the delivery of the clearance papers. Notwithstanding the unimportance of this town, it was not till after a delay of ten hours that we were permitted to go on our way and follow the course of Amyas Leigh westward along the rocky coast.

The following day we stopped at two other small Venezuelan ports, Cumana and Barcelona, neither of which having any harbor, vessels are obliged to anchor at a great distance from the shore, and we had no opportunity to land. I thought we would never get away from Barcelona, as a large party of Spaniards came aboard, bound for Caracas, accompanied by a number of friends to see them off, and made as much fuss in parting as though their absence was to be for years instead of a twelve hours' voyage to La Guyra. The Spanish farewell is very different from our American "good-bye, old fellow, take good care of yourself," in its being more deliberate. First, a long embrace, many loving messages poured into each other's ears, and a great deal of patting on the back, presumably to emphasize the parting words. It does not do to hurry them, else they become so rattled by this interruption that they know not just where they began, and consequently much of the performance would have to be repeated.

We were off at last, however, and early on the morning of the third day after leaving Trinidad we were at anchor in the open roadstead of La Guyra. Looking shoreward from our vessel, the high mountains coming apparently right to the water's edge, it did not seem possible to find room for a town, but La Guyra is not only strung out along the shore, but has been curved up on the sides of the mountain. There is usually a heavy sea at La Guyra, and as this town, like many others along this coast, has no harbor, the landing of passengers is accomplished with considerable difficulty, notwithstanding the skill of the boatman. Our Spanish friends, however, were anxious to get ashore, as the tossing of the vessel made them very unhappy, and it did not take them long to scramble into the small boats that came alongside. Our party followed more leisurely, and after selecting, in our judgment, the best boat, we made the trip of about a mile through the rough sea, passed the breakers successfully, and were finally landed, safe and dry, on the pier. We had been advised to provide ourselves with Venezuelan passports when at Trinidad (we had American passports also), and we experienced no difficulty at the custom house, although our lack of knowledge of the Spanish language cost us many bolivars (the coin of the country, worth twenty cents,) with the boatmen and porters.

STREET SCENE, LA GUYRA.

La Guyra, the shipping port for Caracas, looked in rather a dilapidated condition, built on the side of a hill. Many of the streets are steep, narrow, and crooked. After a fair breakfast —rather Spanish—at the Hotel Vettuno, we took the train from here for Caracas. In a bee line, the distance from Caracas to La Guyra is not much over six miles, but Caracas is in a valley 3,800 feet above the sea, and to reach it from La Guyra by the old trail it was necessary to climb the mountains on the south to the lowest pass, 7,500 feet high, and then go down the other side. The narrow-gauge railway, a triumph of engineering skill, by tunneling and winding around the spurs of the mountain, only has to ascend 4,000 feet, with grades for the greater part of the distance of 195 feet to the mile. The length of the road is twenty-three miles, and the time from La Guyra to Caracas two hours and forty-five minutes. The road was built with English capital, and the engines driven by English engineers.

Almost immediately after the train leaves La Guyra it begins to climb the mountains, turning and twisting up through the valleys, crossing over the mountain streams or high wooden trestles, through deep cuts and numerous tunnels, at many places hugging close by high mountain precipices, the line at certain places being built along a ledge cut in the face of the perpendicular rocks 3,000 feet high. The view constantly broadened out as we ascended, now overlooking La Guyra and the roadstead at our feet, then on the rugged mountains,—a most superb panorama.

On reaching Caracas we were fortunate enough to obtain comfortable quarters at the Hotel St. Amard, although I must confess that, owing to our slight acquaintance with the Spanish language, it was not easily accomplished. This hotel presented to us, as Americans, somewhat of a novelty, being built around the four sides of an open court, with a fountain and bed of flowers in the center. Our rooms opened out on a gallery overlooking the court, and we found this a pleasant lounging place in the heat of the day.

Caracas, the capital of Venezuela, is a typical South American city; the streets laid out at right angles, buildings painted white or yellow, and the red-tile roof predominates. It is situated in a well-watered valley and apparently is in a prosperous condition, with a population of 70,000. It has a beautiful plaza, in which is placed a fine statue of Bolivar, the "liberator of Venezuela." This plaza, illuminated at night, presents a brilliant scene, when the populace gathers, attracted by the military band. There are a number of very imposing public buildings and churches, one of them, the Pantheon, containing the tomb of Bolivar. Guzman Blanco, the former President of Venezuela, has spent the public money very freely in beautifying the city, and also erected numerous statues to himself, as he did not wish to be forgotten.

STREET SCENE, CARACAS.

The climate is variable, but we found it far more pleasant than at Trinidad, for it was cooler. The temperature is rarely above 80 degrees in the hot season. At the time of our visit they had not had rain for several months, and we found the roads too dusty to enjoy driving in the suburbs. The rainy months are April, May, and June.

We visited one of the large coffee plantations and walked through many acres of coffee trees, growing from six to nine feet high. Planted in rows throughout the grove were large mahogany and other trees used to shade the ripening berries. The berries are gathered in January, and then spread out on a large stone court to dry. During our stay in Caracas we found that the inhabitants took life very easily. Nobody was ever in a hurry. They have an excellent club, the "Union," and they know how to enjoy it. They have a favorite expression, "*Manana,*" meaning "to-morrow"; their motto, "Never do to-day what you can put off till to-morrow."

STREAM IN A COFFEE PLANTATION.

We had had ample time to enjoy our visit when the steamer Avon of the Royal Mail Line was announced at La Guyra, and a few hours only were necessary for us to gather our traps together and take the train down the mountains. We were soon aboard the steamer, and as the long shadows of evening were falling over the town of La Guyra and the lights one by one from the houses along the shore beamed out over the waters, we steamed away along the coast.

We were but two nights and a day in returning to Trinidad on the Avon, where we arrived just in time to connect with the Solent, of the same line, bound for Barbadoes. The day after we arrived at Bridgeton we embarked on the Royal Mail steamer Moselle, from Southampton for Jamaica and Colon. From La Guyra we desired to go direct to Jamaica or Cuba; but it was necessary for us to retrace our course as far as Barbadoes, and we were exceedingly fortunate in making such good connections, as the various lines of steamers are scheduled two weeks or a month apart. From Jamaica we desired to go to Cuba, and in that way reach Mexico; but at Barbadoes we were unable to ascertain if there was any steamer connection. We were not discouraged, however, and the four days spent aboard the Moselle were among the most delightful of our ocean cruise.

As I look back upon my trip, I must say that I neglected many opportunities to secure photographs with the camera; but when you are traveling for pleasure in a country with a climate similar to that which we enjoyed, you soon lose your energy, and prefer to follow the example of the inhabitants, by taking life very easy. I know very well that if I had taken a large camera and glass plates with me they would probably have remained in the case. No matter how enthusiastic a photographer you are, unless you go on a trip of this nature purely for photographing purposes, do not attempt to carry anything more than a good hand camera, your films, and a changing lamp. Do not attempt to carry chemicals for the purpose of development, because you will not be in the mood to use them, nor will you find the facilities for working convenient, and you will have enough to do to keep your film holders filled. It is well to carry a number of holders, so that you will not be obliged to change films in the day time, and if you will keep your packages of films well wrapped up in tin-foil or rubber cloth, they will be well protected from the sea air, so that you can do your developing upon your return home.

The day before our arrival at Kingston we hove to for a few hours off Jacmel, Hayti, and received a few fugitives who were leaving on account of the rebellion then in progress; but as we did not have an opportunity to go ashore, could not form much of an impression regarding the town.

(To be continued.)

Helps in the Studio.

BY MISS CATHERINE WEED BARNES.

[Read before the Society of Amateur Photographers of New York, March 11, 1890.]

WE hear in an orchestra several different instruments, which, used according to certain rules, produce what is called harmony. There are some more important than others, apparently, but where would be the value of the first violin, for instance, if the second played out of tune? Each has its work, and the failure of one ruins the effect of all. So, in a studio, are many instruments with the sitter as first violin, but each must do its part towards the complete harmony. To follow out my simile,—the guiding force behind the camera must understand just how to control what is before it, and be able to summon at will a legion of helps, as the orchestra leader directs the various instruments under his control.

Chief among these helps are, of course, a good light and a good lens. If one could have also plenty of room to move what a stage manager would call "properties," he would be more fortunate than poor Mr. Toots, who declared: "I'd be all right if I could only get a start." The average amateur, if he has a studio at all, must be contented with a small one, and has to cut his coat according to his cloth. It must be taken for granted that the amateur who desires to make studio portraits, desires to do good work, and that all the manifold discouragements which are inevitable and unavoidable must be met one by one and overcome, or forced to change front, so that threatened defeat is turned to victory.

With the constant improvement in lenses it is not difficult to find excellent ones for portrait work in small studios, but, although the first cost is apt to be heavy, it is no economy to buy a cheap one. I was recently asked if I used the same lens for interiors and portraits, and another friend expected to make good portraits in an ordinary room with a cheap long-focus view lens. My largest lens, three and one-half inches diameter, has a Green shutter used with a bulb, and to show the strength of my studio light, I recently stopped it down to one inch for a second's exposure, with a satisfactory result. This was done on a dull day. No studio should have less than two lenses, and one of those ought to be able to cut a considerable distance back of the figure. While ordinary portrait work is excellent for practice, the ambitious amateur who has genuine love for art soon longs to broaden his field of action, and if blessed with originality of conception and mechanical taste is eager to produce something new and hitherto unattempted.

Ideas may be plenty but models are few,—that is, the models one desires. One's friends are apt to say, "I never take a good picture, but I thought I'd see if you could get one of me." Unless there is some special reason for giving them your time, thought, and a considerable amount of brain-force, avoid such subjects. They cannot come under the head of "helps." If you wish to try some new plates, or a new developer, take any subject you can get and do the very best you know how with the material given you. Do not slight any part of the work, for if the subject be not attractive, it is always possible to get ideas therefrom, something in the lighting, posing, or development. Poor human nature finds it easier to form bad than good habits, so, at the outset of studio work, it is best to make up one's mind to gain all that is possible from every sitter. Learn by your mistakes, turn every one of them into an object lesson, and very soon you will begin to find such mistakes become few and far between. Besides in failing to do one thing you may discover something far better. As I have said, the amateur usually has to rest satisfied with a small studio, but in mine, only 9 x 19, with my W. A. Voigtländer I get the effect of a much larger room than is really the case, while it covers an 8 x 10 plate clear to the corners, with everything in good focus. This means that I do not care to have every inch alike sharp, though the lens can do it, but approximately so, that the face may look as if it was molded by a sculptor, and not as if cut out of white paper and pasted on flat. Coming to large heads a wide-angle lens proves unsuitable, and one with a longer focus and large diameter is needed. This necessitates a shutter owing to excess of light, and because, in removing the cap, it is almost impossible to avoid jarring the camera. Portrait cameras are made so heavy to prevent this that they need a firmly-built stand, which, however, must move easily as suits the photographer's wishes. Everything, indeed, in the studio, must be convenient, accessible, and easily managed, for the light may change suddenly, the sitter become nervous or tired, and all the previous labor be rendered useless because of a broken cord, the head-rest not working right, the stops being mislaid, or some similar difficulty occurring. I understand that Mr. Dallmeyer has said that lenses not in use should be kept covered, not alone with the cap, but so that no light could possibly reach them. It is well, therefore, to throw the focusing-cloth over camera and lens when a sitting is finished.

I was obliged to have my whole skylight of glass, but gray shades cover three sides while those to the north are white. If an outdoor picture is desired it is possible to run up the shades on all sides and use the quickest possible detective camera so as to fairly deceive the very elect. Many backgrounds are not necessary, but one or two shaded ones are useful and a third on which any needed design can be drawn and replaced by others. I have had a curtain-rod put up above and a little in front of my backgrounds so as to use portières or curtains if wished. Over the white shades on the inclined part of the skylight have been placed on heavy wires three sets of black curtains which can be shifted in part, or all together, as needed, by a long pole from below. These are not used much except in summer when the light is almost too strong.

Of course the studio should be so arranged that it could be used for genre pictures, illustration studies, and fancy subjects, as well as simple portraits. Whenever it is possible to avoid using the ordinary studio accessories I believe in so doing. Trees, grass, stiles, etc., require the broad light of all outdoors and it does seem incongruous to view them as one does the unreal forests of the stage, for they deceive no one, even when the deception is allowable, indeed perfectly fitting. For this reason it is well to confine one's fancy studies to those where an in-door light is appropriate. If the wings of one's inspiration demand a wider flight it will require a world of care and exceptional facilities to gratify it. So it is well to recognize one's limitations.

The camera and stand should have all the newest devices to work quickly, accurately and firmly, and, where a lady is the operator, as few projections as possible to catch on her clothing. As regards screens, it is well to have one or two, but with my light they do not seem necessary, their purpose being served by the two sets of curtains. A head-rest is, of course, absolutely necessary, but it seems to me that the ideal one has not yet been invented. The sitter looks on it as an instrument of torture and it often requires more care in adjustment than the camera itself. "I can sit still without that awful thing," is generally the first remark of my sitters, to which I reply: "If so, you will be the first one who ever did." More negatives than could easily be counted owe their being failures to this fear of the head-rest. I have also a vignetter, but it is not of much practical use.

A variety of rugs, furniture and bric-à-brac is invaluable to one who wearies of always placing a sitter (if full or three-quarters figure) with the same old book in the hand. Yet there must be something to make the muscles of shoulder, arm, and hand, keep their proper place. Once a friend said to me on seeing her vignetted picture, "Why did you make me hold a fan if my hands were not to show?" "To keep your shoulders where they should be. You had them stiff and rigid, but the muscles relaxed the moment you held the fan." An artist will sit all the more naturally if he holds a palette and brushes, whether they show or not and, indeed, any one poses most naturally if apparently engaged in some congenial occupation. There are people, however, who can retain any desired expression without the lines of the face growing tense or hard, who, when you arrange a poorly-placed hand will let the lines of the arm follow those of the hand instead of acting as if the latter was hinged at the wrist, but such people are rare. When you do get such a wonder, set your mental machinery instantly at work designing poses and give yourself up to realizing them. One really fine picture is worth a dozen poor ones.

A quick eye, a skillful hand, artistic taste, and good judgment with endless patience and control of the nerves are studio helps whose value passes computation, and which fortunately are largely the result of experience.

Constant study and accustoming one's self to mentally pose people whenever they suggest a good subject is often a great help when one is at a stand-still for poses in the studio; as obliging the mind to retain certain taking situations and poses, trains it to devise others. I have made mental pictures many times but waited long for proper models to complete them, and have under way now a set of illustrations for a well-known poem which it will require months to render a fact. All possible artistic training comes good to a camerist with its practice in form and color, while histrionic study for ease of attitude and dramatic, not theatrical suggestiveness is a constant help. And here let me say that I wish the word "camerist" would come into more general use.

Mental culture in its broadest sense is the best help a camerist can have, and seconded as it should be, by the helps I have mentioned will constantly raise the standard of studio portrait work until, gradually and in sure course of time, it will come to pass that such work will be done, not to suit a fleeting fashion, not to please every chance sitter, but to make photography what it should be, faithful to the eternal principles of true art.

Photo-Micrography.

BY DR. L. H. LAUDY.

[Abstract of an address before the Society of Amateur Photographers, February 11, 1890.]

Mr. President, Ladies, and Gentlemen:

NONE of our senses supply us with such extensive and exact knowledge of the structure of the three kingdoms of nature as that of sight. We move the eye and it measures by a glance the exact space around us, and there is pictured for us those external forms which are so reduced in size as to form an image on the retinal surface and by our senses to enlarge and translate size and distance so as to enable us to express them in certain magnitudes. This power of translation we learn but slowly and painfully to estimate, in fact it is rather a guess.

We know in a general way the size of a man, tree, or house and thus we determine distance in a landscape. The image reflected on our eye is not a bodily substantial picture, but only a level surface which our intellectual eye, the mind, must learn to translate. Distance or size cannot be measured except by comparison, which is strictly a mental process. Elevation or depression are only revealed to our sight by their shadows, and where these are too slight or wanting we have only an outline. By this shadow-process are produced the ever changing life of forms, light, and color. The fairest landscape and sea view change their beauty with the bright or dimmer light, until the spell of twilight overtakes the scene and all forms and colors fade away in darkness, again to be illumined by the orb of day, and thus change from the invisible to visible.

All these changes are the result of vibrations of great rapidity exciting in our minds by a stimulus acting upon the retina, which is a delicate expansion of the optic nerve lining, the posterior part of the eye-ball. Upon this tender membrane, light paints with unceasing activity image after image. The retina answers the purpose of the sensitive photographic plate, developed by the optic nerve and conveyed to the brain in all integrity and color. The pictures of all that surrounds us are thus reflected and photographed for an instant and pass away to make room for others.

If such are the powers of the unaided eye, what must it be when magnitudes are calculated in the thousands. It opens the gates to another world of beauty as yet but half revealed; it is a paradise to which man has but lately possessed the key and into which thousands have never yet glanced an eye. If the invisible world has such beauties how much more is there which had never entered into the minds of man in that invisible region to which the eye above could never penetrate but which the microscope has revealed.

To this structural world I would ask you to go with me, and by the aid of the microscope and photography we will be able to understand the marvelous structure it reveals. The knowledge of the physical sciences is only possible with the aid of the microscope, and all workers in this line should have some acquaintance with its use. How much more important does the same instrument become when applied to project its image upon the sensitive photo surface and preserve those vivid forms of nature and manifold forms of life and beauty that surround us.

The desire at the present day is the graphic method of teaching, that is, to be able to educate by means of the crayon or pencil and produce in outline or perspective such effects that will leave an impression that a description fails to convey. Few are capable of using freely crayon or pencil, and even with these the imagination is elastic and the picture thus produced is a mere conception of mind conveyed to lines pleasing yet wanting in exactness as compared to the photographic impression. It is admitted that no matter how excellent drawings may be executed they can never approach in reliability and delineations that of the photograph; with this there are no mistakes of draughtsman or engraver, no false lines or blots, no imagination, no attempts at adding what should not be seen, or at making the picture agree with a theory. It shows just what the object is without the mistakes of the artist and is a copy perfect in every detail, true to nature, except in color, which may be duplicated at will. When, therefore, we look upon a photo-micrograph we know that mere imagination has had nothing to do with its presence; it is there because it is a *fac simile*, a truth, so to speak, without human agency and by means of light alone. Sometimes things of grosser sort will seem to make those of finer quality more intelligible. Questions in regard to the microscope are difficult because of their fineness, but it is possible to make them clear if we resemble them to familiar subjects.

We speak of a thousand diameters; this conveys little if any idea of the magnitude, but let us compare this to some objects of known size and we get some idea of its magnifications. As an illustration, take a human being that measures five feet two inches and present it to you as magnified one thousand times. The individual would be one mile high, his weight being 120 pounds, he would weigh 120,000,000 pounds, equal to 60,000,000 tons. He could step over the Pyramids with the same ease as we would over a footstool. Reverse these magnitudes and many objects in nature are only half revealed, and to bring them out in detail is yet beyond the powers of the microscope.

Those minute skeleton forms called diatoms with their beautiful structures, many of which measure only $\frac{1}{10,000}$ of an inch to make a mass to correspond to a human being, would require more figures than the mind could conceive of.

To this audience and upon this occasion a review of the history of the microscope and its many applications would carry us too far away from the direct objects under discussion. If to some this may appear as an omission, my excuse is for want of time rather than for material. A few remarks on the history of the microscope as applied to photography, and to its then practical applications, my remarks will be mostly confined.

In 1803 (more than thirty years before the announcement of Daguerre's discovery in 1839) Thomas Wedgwood and Sir H. Davy obtained, by means of the solar microscope, impressions of microscopic objects on white leather and letter paper, employing the chloride of silver. These impressions were not permanent. In 1837 Rev. I. B. Reade obtained and fixed photographs on paper. He used the solar microscope and photographed specimens of different variety; in 1839 he exhibited more perfect specimens. According to E. T. Wilson, Mr. Reade, in 1840, exhibited the magnified image of a flea at a *soiree* given by the Marquis of Northampton.

In 1840 Mr. Dancer in England produced pictures of microscopic objects with the gas microscopes. In the same year Dr. Donné, of Paris, presented to the Academy of Science, copies of various micro objects obtained on daguerreotype plates. In 1841 Richard Hodgson produced excellent daguerreotypes of micro objects. In 1844 appeared an atlas of microphotographic productions from daguerreotype plates by Donné and Foucault.

In 1850 Mr. G. Lawden, of Dundee, made the *Jumbo Microscope*. It was four feet high; the body tube was four inches in diameter, and the whole weighed one hundred and fifty pounds. The coarse adjustment was made by moving the stage up and down; the fine adjustment was controlled by an inner tube to which the objective was attached; the eye-piece was pierced with a slit to admit *prepared paper* sensitized for taking Calotypes or Talbotypes. It is thought no picture was ever taken with the apparatus.

Dr. I. W. Draper made daguerreotypes of micro objects from 1851 to 1856.

It will be well to explain the definition of words combining microscopy with photography, as they sometimes get mixed in the public mind.

A *photo-micrograph* is a photograph of a microscopic object more or less magnified.

A *micro-photograph* is a photographic picture much reduced in size. requiring a microscope to see it.

[A micro-photograph transparency, such as is put in watch charms, was then inserted in Dr. Laudy's special electric arc-light lantern and projected on a white wall screen with excellent effect. He next projected the image of the arc light through a pinhole, showing how the image was formed and with a pin punched several holes through the paper screen, resulting in as many different images appearing on the screen. Putting a lens in front of the lantern he was able to collect all the different images and focus them into one on the screen. It was a very interesting experiment.]

In the practice of photo-micrography the conditions of success to be observed are proper illumination, a rigid stand or base on which the whole apparatus rests, facility of management, correct centering of the light, absolute freedom from vibration, exclusion of all light except that which enters the object glass, and proper objectives. No special line can be drawn to meet the wants of each individual. Each adopts his own manner of working to secure the best results, though different methods have been adopted.

The sources of light that may be used are the sun, which gives parallel rays, [In this connection a model of Johnston's Heliostatt made by Schmidt & Haensch of Berlin, for keeping the sun's rays in one steady beam, was exhibited.] artificial light, such as the electric arc light, oxyhydrogen lime light, magnesium light, petroleum light and incandescent electric lights of various powers. In objectives for low powers any good photographic lenses can be used. Miller's set of 3-inch, 2-inch, 1½-inch, 1-inch, ½-inch, and ¼-inch are all corrected for photo-work. The special requisites are, that the lenses have good resolving powers, definition, penetration, and flatness of field.

High power lenses are $\frac{1}{6}$, $\frac{1}{8}$, $\frac{1}{12}$, $\frac{1}{16}$, $\frac{1}{18}$, $\frac{1}{20}$, $\frac{1}{25}$, and $\frac{1}{50}$ × 3.500. In and out of focus means with a $\frac{1}{18}$ lens × 1.000 to 2.500 is the difference of $\frac{1}{10,000}$ of an inch.

Referring to the magnifying power of microscopic objectives, 10, 20, 50 diameters or any multiple is estimated in *linear* dimensions and not in *superficial*, which is the square of the lines, and is only used to excite popular admiration.

Micrometer rulings on glass vary from the $\frac{1}{100}$ of an inch to 200,000 to the inch.

I never use the eye-piece of the microscope but let the enlarged image be projected direct from the objective to the ground glass. A table or long board answers for a stand, the main point to be kept in view is that they shall be rigid. The light must be well centered. To detect vibrations I use the mercury-trough which is placed on the table or board. Any suitable camera can be employed. The one I use has a small conical bellows attached to the front, which, by an elastic, I slip over the end of the microscope. Along the side of the table is fixed a focusing rod, which extends back to the rear of the camera; from this rod is a belt or string which passes over the periphery of the focusing wheel on the microscope. By rotating the rod while looking at the ground glass, the focus is very easily obtained. It is very convenient to have a shutter inside of the camera. I generally give an exposure of about from one second or five according to the transparency of the object.

Nothing need be said about development, as that is a subject with which many of you are familiar. In selecting the objects to be photographed it is very essential that they be thin and flat so that all lines are in one plane. It thus follows that not all microscopic objects can be photographed. Among the various applications of micro-photography, is its use in pathology, such as the diagnosis of disease, and in the examinations of food and drugs. It also shows the curious forms of bacteria, and aids us in applied science, in geology, botany, and many other sciences.

[At the conclusion of the lecture, Doctor Laudy exhibited models of many forms of cameras, and also threw on the screen pictures of several others, together with a number of lantern slides of beautiful microscopic objects. He also, with the electric-light lantern, through a microscopic objective, projected on the screen the microscopic object itself and then a lantern slide made from a photograph. The beauty of the color in the original was sufficient to make it much more attractive than the photograph in which all color was absent.]

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Pyrotechnical Photography.

BY WALLACE GOOLD LEVISON.

[Read before the Brooklyn Academy of Photography, November 26, 1889.]

MY acquaintance with this subject dates from the evening of Pain's day at Manhattan Beach, September 13, 1884, when I exposed a plate in a small hand camera upon a piece of fire-works near which I was standing on the lawn. The resulting negative was possibly the first dry-plate picture, if not the very first photograph of a piece of fire-works, ever made. Upon developing this plate I realized that with experience in making such pictures, very beautiful effects might be obtained. On September 17, 1887, I again attempted to photograph one of Pain & Son's designs in fire-works which was occasionally shown at Manhatten Beach during that year, entitled "The Battle of the Monitor and Merrimac." One or two set pieces are included in the picture, and a study of it is quite interesting.

The camera was open all the time the lances of the set piece continued to burn. These lances are quite actinic, and yet they have not halated the plate to any serious extent. The stream of Roman candle balls which the Merrimac is projecting upon the Monitor, and which in the view looks like a stream of water from a fire engine, was not seen precisely as it appears in the picture. On the contrary, each Roman candle ball was projected separately, and independently traced its trajectory on the plate. As the plate was exposed throughout the engagement all the projectiles are shown together in the picture and the terror of the combat thereby greatly enhanced. Such pictures as this are taken by the extremely simple method that is used for photographing a flash of lightning. The camera is merely aimed toward the point where the discharge will take place, and left open until it has occurred. When sufficiently sensitive plates are made, this process will be of great value to the astronomer as a means of registering every meteor in a meteoric shower.

All fire-works, however, cannot be taken by so easy a method. If the camera be left open before a piece discharging a shower of fine sparks, no doubt each may be separately photographed; but during so long an exposure so many images are superposed as to obliterate each other on the plate. This is the case with the picture of a large wheel taken at Manhattan Beach on August 22, 1889. In another view, taken at Manhattan on September 17, 1887, this difficulty was avoided by limiting the duration of the exposure to about one revolution of the wheel. The peculiar tracery observed within the circle was caused by the burning end of a long fuse intended to ignite a central rosette.

Since the summer of 1888 Mr. G. S. Wheeler has participated in part of the experiments, and as a result of three visits together to Pain & Son's exhibition under rather unfavorable conditions, we are enabled to present a fair abstract of an evening with the fire-works at Manhattan Beach.

To fairly complete the fire-work photographic display I next present three views of the large fountain and the mines. Next, two views of the eruption of Vesuvius and burning of Pompeii, at various stages, taken on August 22, 1889; and finally, the closing flight of rockets taken from a distance during the summer of 1888.

From these experiments we passed, at the suggestion of Mr. Wheeler, to photographing small pieces, chiefly Catharine and triangle wheels, of which a number of samples are lying upon the table before us. To the eye the most attractive feature of these small wheels is the shower of golden fire and falling sparks they emit. We hoped that each of these sparks, like the more brilliant Roman candle balls, would trace its picture upon the plate, and by thus accumulating all of them together we sought from a penny pin-wheel to produce upon the screen a picture which would favorably compare with one of Messrs. Pain's more pretentious pieces.

Fifteen feet is about as near as a wheel can be brought to the camera and its entire fringe or shower of fire be kept within the limits of the plate, but at this distance the sparks from these wheels, which are probably particles of burning willow charcoal, hardly affect the plate, perhaps because their light is not highly actinic. Just at the mouths of their cases, however, the light is so intense that the bright central circle it traces is always distinctly photographed. Wheels of a larger size, such as the four-ounce triangle, give this central circle with full intensity. The fringe of fire that a small wheel such as the one-ounce triangle gives will, however, produce considerable impression when it is brought within eight feet of the camera. No doubt small wheels and other pieces may be obtained which will produce showers of whiter and more actinic sparks and afford pictures of singular beauty; but within the few days since the beginning of these experiments we have not found any such pieces. Larger exhibits, however, such as rosette wheels and China flyers, which present center circles of several changes, afford coronæ or outer fringes that are too actinic to submit to a continued exposure. A moderate exposure when the wheel is at its best is sufficient for such a piece.

While the photographic effects of wheels and such small fire-works will hardly, as was anticipated, create an epidemic of pyrotechnical photography among the amateurs, yet it is with some fear of such a consequence that I present a picture of a set piece which was created by a device of Mr. Wheeler's. A design is traced in outline upon a fence; the camera is set before it and focused. A common blue light is then held momentarily at each point in succession where in a regular set piece a lance would be fixed. If the shutter is left open as the blue light is moved from point to point, the outline of the design will be traced upon the plate as well as the points where the blue light pauses. If the shutter is closed while the blue light is moved from point to point, only the points where it rests will be marked on the plate. In either case by closing the shutter, while the blue light when nearly consumed is exchanged for a new one, a picture of a set piece of any desired outline may be easily obtained for a few cents. Furthermore, by fixing a wheel in its center, holding a Roman candle momentarily upon appropriate radii, and by other such devices we have a new use for the simpler fire-works, and an interesting method of imitating exhibition pieces of any complexity. By following in this way with the blue light, an inscription written on a fence in pencil, it may be recorded by the camera with novel effect.

Although my attention has been given to the subject of this little contribution for several years, it has not been studied with the close attention it deserves, or several useful applications of it might have been developed. But that it will be useful in one way I am quite confident. I refer to the photographing of conflagrations. I am satisfied that such subjects, even at night, will afford startling pictures when skillfully photographed, although I have had but one opportunity of exposing a plate upon a burning building at night, and that was from an unfavorable point of view, and too late in the progress of the fire to present favorable conditions. The picture so obtained was taken about five minutes past three on the morning of October 13th last, and the subject of it was the burning of Dr. Talmage's Tabernacle.

The illustrations I have shown, it seems to me, fairly indicate that in pyrotechnical photography a new and fertile field is offered for exploration by the enterprising amateur.

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Hand Cameras.

By W. H. Burbank.

THE gelatine dry plate made the hand camera a possibility, and the hand camera has created tourist photography with all its possibilities of pleasure and profit. The name "Detective" should be dropped from the photographic vocabulary at once and forever. The word savors too much of devious ways and shady practices to be retained by any true lover of the camera. But against the term "Hand Camera" there lies no such objection, while it has the merit of being descriptive of this class of cameras, which are one and all intended primarily to be held in the hand for rapid exposures.

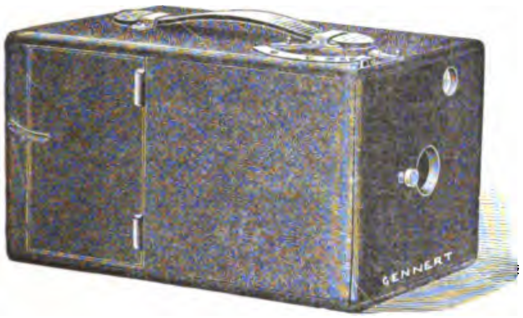
For both these reasons I have adopted the term as the heading of a series of articles intended to include all the better class of the small boxes of this class which has had a rapid increase during the last five years. It is hoped that such a bringing together of description and illustration may help some of the readers of the American Amateur Photographer in their choice of a portable camera for the coming season's work. Every camera described in these papers has been thoroughly tested under varying conditions, and the descriptions are, therefore, based on personal knowledge, not a mere re-writing of the laudatory hand-book.

While it forms no part of my purpose to recommend any special make above others, I shall not hesitate to point out special excellences, and to call attention to errors or weaknesses in construction where such exist.

THE MONTAUK CAMERA.

This is the first described simply because it was the first to be tested. Its outward appearance is tasteful and pleasing. There are no unduly obtrusive parts, and all the brass work is oxidized and harmonizes well with the black Turkish morocco covering. The external dimensions of the box for 4 x 5 plates are 6 x 7 x 10½ inches, and the weight is two pounds, well sustaining the maker's claim that "it is the lightest and smallest camera of its kind."

The cut gives an accurate representation of its appearance and external fittings. A milled-head screw, projecting from the front of the box at the right of the lens opening, serves to set the shutter by a turn to the right. The opening for the finder lens is at the upper left-hand corner. Two trigger releases project through the top near the front. That on the right is used for shutter exposures, the time-exposure trigger being thrown out of action by bringing a hook over it. The focusing scale and lever are in their proper position at the top of the box. Varying distances from eight to sixty feet are plainly marked on the scale. The back of the camera is moved in or out by turning the lever. The door on the right gives access to the plate holders, of which three may be carried in the box. The holders are of a simple and efficient pattern, light, and compact, and so constructed as to cut off very little of the margins of the plates.



The lens is a rapid rectilinear of extremely good performance, covering the plate well and embracing a moderate but not excessive angle. Its focal length is about six inches. It is provided with a fixed diaphragm.

The shutter is of the circular rotary type actuated by means of a brass spring wire coiled about a screw, one end engaging on a boss on the shutter, and the other in slots cut in a brass plate on the bottom of the box. The speed of the shutter is regulated by moving this end of the wire to the right or left.

The camera may be mounted on a tripod and used for time exposures. In such cases the hook covering the time-exposure trigger is thrown back. When the other trigger is pressed down the secondary trigger engages the shutter, when its opening is opposite the lens, which remains open until the trigger is pressed down, thus closing the lens opening. A ground glass frame and a peep-hole at the back make visual focusing possible.

My own trials of the "Montauk" have been highly satisfactory. Mr. G. Gennert, 54 East Tenth Street, New York, is the maker, and the price with three double holders is $25.00.

THE ULTIMATE.

This is a recent addition to the family of hand cameras, and it shows much originality and an acquaintance with the conditions which such a camera should meet. In outward appearance it has very few of the ear-marks of a camera. Complicated machinery, gearing, levers *et hoc genus omne* are dispensed with to the increased comfort and certainty of the manipulations.

As will be seen from the cuts there is no external mechanism except the shutter lever. The size of the box is 6 x 5 x 9 inches and its weight is $4\frac{1}{2}$ pounds. Fig. 1 shows the camera when ready for an exposure. The shutter is set by revolving the shutter-lever to the right. A slight motion of the lever is now sufficient to set the shutter in motion. The shutter is extremely simple in construction and admits of time exposures. The duration of the exposure is regulated not by changing the speed, but by diminishing the size of the shutter-opening.

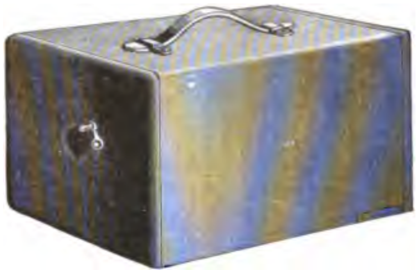


Fig. 1.

The construction of the camera and plate holders is such as to allow individual choice in the lens or sensitive surface used. Any lens of from four to eight-inch focal length may be used, and either plates, flat films or the roll-holder as may be preferred.

Fig. 2, which is a view of the bottom of the box, shows the sliding front portion which allows the use of lenses of different focal lengths, and the door which gives access to the plate holders which are made of metal, strong and simple. Each holder is held firmly in place at the focal plane by an ingenious device called the "patent back," which is easily removed when it is desired to use a roll holder. The lens usually furnished with the box is a Pantagraph of $5\frac{3}{4}$-inch focus, but lenses of other focal lengths may be substituted, as the sliding front allows a wide latitude.

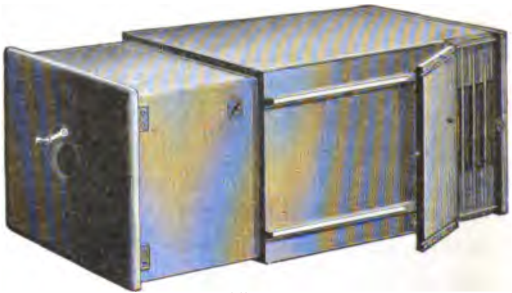


Fig. 2.

The Ultimate is manufactured by Queen & Co., Philadelphia and varies in price from $35.00 to $45.00 according to the fittings. I was greatly pleased with the sample box sent to me for trial and unhesitatingly recommend it.

THE BROMFIELD.

This box resembles closely in external appearance the well-known Scovil "Detective," but is slightly larger, being $11\frac{1}{2}$x9x6 inches and weighing, with three 4 x 5 plate holders, six pounds. It is a well-made, substantial, leather-covered box, and is fitted with two finders, an improved focusing lever, and two right-angled levels for rapid and accurate leveling. The shutter is of the double-leaved, open and shut pattern, operated by pressure on two buttons projecting through the bottom of the box. It has a time attachment and is well-made and effective. There is a ground-glass frame for focusing for time work, and the shutter opening may be closed by a sliding door, thus allowing the shutter to be set with the slide of the holder withdrawn. The speed of the shutter is easily and quickly changed.

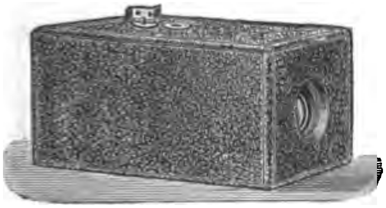
The lens is the "Eurygraph," a rapid rectilinear of excellent qualities, and having a focal length of about five and one-half inches. Provision is made in the inside of the cover for carrying the focusing frame, the lens cap, and the diaphragms. Six holders may be carried in the box, or a roll holder may be fitted to it. The levels, focusing-lever, and shutter are all original features, and the Bromfield is a thoroughly good box. It is manufactured by Barker & Starbird, 56 Bromfield Street, Boston.

THE KODAKS.

Encouraged by the success of the original Kodak, the Eastman Company have applied the main principles of its construction to a number of cameras of larger size. As a result there are now eight Kodaks making negatives from a two and five-eighths circle to five by seven inches. Models of some of the new sizes were shown at the Boston Convention, and were spoken of in our report. But it is only recently that the company have been ready to supply the demand which judicious advertising has created for them.

Whatever objections may be laid at the door of the original Kodak as tending to reduce photography to mere mechanism, nothing but praise can be given to the new and larger sizes, which, in the event of the new film proving a success, of which more in another place, are far and away superior to anything in the hand camera line which has so far been placed on the American market. For careful adaptation of means to ends, accurate fitting, good workmanship, and completeness in detail, the Kodaks have no superiors and not many equals. All the essential details of construction are clearly shown in the accompanying cuts.

The original No. 1 has been improved in some points, notably in the fitting of the front, which is now hinged at the bottom, thus making it more convenient to get at the lens and shutter. This feature has been adopted in all the sizes. While it is probable that the advent of the larger sizes will somewhat diminish the demand for the No. 1, it still remains the "Note Book of Photography" and will doubtless long enjoy a certain degree of popularity.

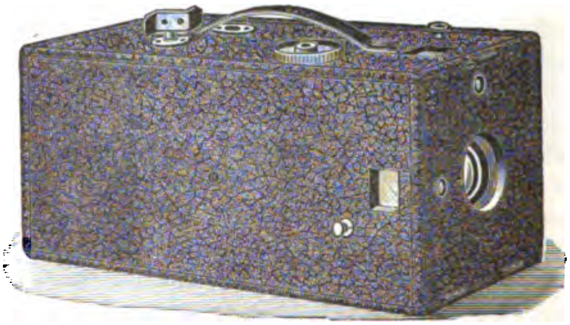


NO. 1 KODAK.

The objection commonly made against the original Kodak, the small size of the picture—$2\frac{5}{8}$ inches, is, to a certain extent, removed in the No. 2, which makes a picture $3\frac{1}{2}$ inches in diameter, a size well adapted to making lantern slides 2¾ inches in diameter. The No. 2 is provided with a finder and has a lens of the "fixed focus" type like that in No. 1. A movable diaphragm plate behind the shutter with three different sized openings allows a wider range of work than was possible with the original fixed opening of the No. 1. The holder has a capacity for one hundred exposures. The dimensions are 4½ x 5 x 9 inches, and the weight is 2 pounds 12 ounces. The price is $32.50. The No. 2 may safely be recommended to those who do not care to be bothered with overmuch manipulation in their picture-making, but would like a somewhat larger picture than that of the original size.

NO. 2 KODAK.

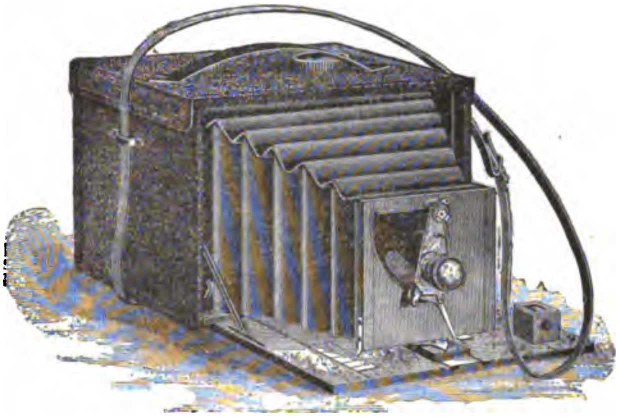
The No. 3 is the first of the Kodaks which makes an oblong picture. Its negatives are 3¼ x 4¼ inches. It has two finders, one for horizontal and one for vertical pictures. The lens is a Bausch & Lomb Universal with rotating stops. The shutter is adjustable for speed, and there are two screw plates for use with the tripod. An improvement that will be appreciated by many is the focusing attachment, the large milled head screws on the top of the box. This works over a graduated distance-scale and is one of the most finished focusing attachments now in use. The No. 3 will be liked by those who make negatives with a special view to using them for lantern-slide making by contact printing. Its dimensions are 4¼ x 5½ x 11½ in. It weighs, loaded with sixty exposures, four pounds. The price is $40. The holder will take a reel of one hundred exposures.


NOS. 3 AND 4 KODAK.

NO. 4, JUNIOR.

The No. 3, Junior, differs from the regular No. 3 in being more compact and lighter. It will carry only sixty exposures. As it uses a 3¼-inch spool instead of the 4¼-inch of the regular No. 3, it is slightly more economical in working expense.

The No. 4 is simply the No. 3 enlarged to make a 4 x 5-inch picture. It has a holder for one hundred exposures and weighs 4½ pounds. Its dimensions are 5 x 6 x 3⅛ x 12¾ inches and the price is $50.00. The No. 4, Junior, is a more compact pattern of the above, taking only forty-eight exposures. In this pattern the roll holder, instead of being pulled out from the box, is so arranged that it may be detached from it, which we think a better arrangement, as there is less liability of sticking.



No. 5 (5 x 7) Folding Kodak, Open.

The Carrying Case.

In addition to these patterns of the Kodak proper there are two folding Kodaks, the No. 4, and No. 5 Folding, the former for 4 x 5 pictures and the latter for 5 x 7. Each has a capacity for forty-eight exposures, and the method of construction is plainly shown in the cut which represents the No. 5 open. This style is self-contained when closed, and can be opened and focused in two motions. The claim that it is the most compact and simple folding camera ever made seems to be warranted by the facts in the case and each of the boxes is beautiful enough to satisfy the most fastidious. The front of the camera when let down forms the bed. The lens front is quickly racked out and readily clamped at the proper distance, indicated on the folding index. These cameras can be used either in the hand or on a tripod, and it would seem impossible to devise anything better in the way of simple and compact hand cameras. A reversible finder is sent with every box. The dimensions of the No. 4 are 7x5x5½ inches, its weight is 3 pounds 9 ounces, and the price is $50.00. The No. 5 costs $60.00. It measures 6¼ x 7 x 9 inches and weighs 5¼ pounds.

This description of the new departure in cameras would be incomplete without brief mention of the carrying cases which are made of sole leather, hand-sewed, and having no openings for fittings, form neat and elegant cases. Everything about the Kodaks is of the best, and intending purchasers have the guarantee of a responsible company that every box sent out has been thoroughly tested and approved by an expert.

THE FERRET.

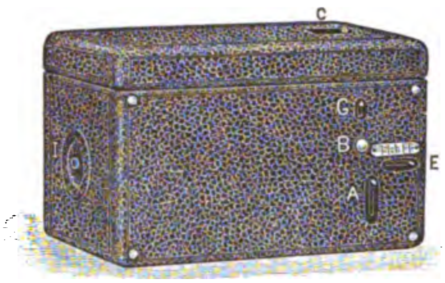


Fig. 1.

This is the latest effort at combining simplicity, efficiency, and cheapness in a hand camera, and reference to the cuts will show that the combination has been remarkably successful. The outside measurements of the 4 x 5 box are 11 x 7 x 7 inches, and the weight with four loaded holders is five pounds. The box is well and substantially made, and is neatly covered with black-grained leather. The outside mechanism is not unduly obtrusive, and there is very little about the box to attract attention.

Figure 1 gives a general view of the box closed for action. The object to be photographed is plainly visible at *C* when the cover-slide is drawn. The lever *A* sets the shutter which is of the leaved variety, and was figured in the March number of this magazine. *B* is the release button which works very easily. The lower half of the shutter is released first, and when partly closed it releases the upper half. *G* is the speed regulator, and when pulled completely out it locks the upper half of the shutter for time exposures. In this case the lens is closed by a slight touch on *G*. *E* is the focusing lever by means of which the lens is racked in or out. *I* is a detachable cover which is removed for focusing when the camera is mounted on a tripod for time exposures, for which the box is well adapted. Four double plate holders may be carried in the box, or a roll-holder may be fitted at slight additional cost.

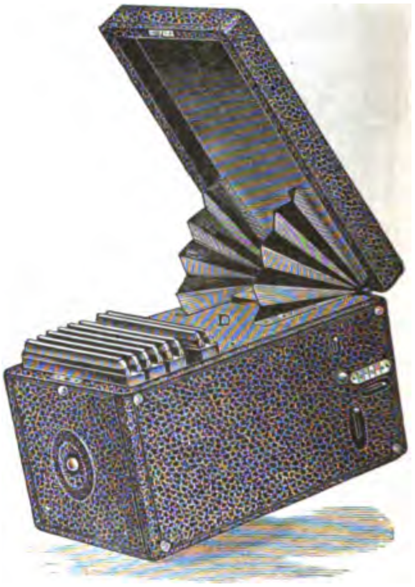


Fig. 2.

The lens is a single achromatic, probably a Darlot, and is well adapted for general viewing. If desired a higher grade lens can be fitted to the box.

Fig. 2 shows the box with the cover raised to expose the finder glass, *D*. The fan-shaped attachments shade the finder and allow the image to be plainly seen.

The price of the "Ferret" with one 4 x 5 holder is $15.00, and it is good value for the money. The agents are Messrs. Loeber Brothers, New York.

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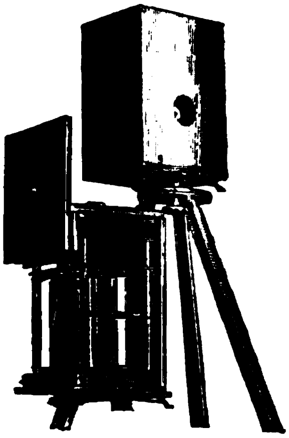
A Panoramic Camera.

THIS instrument, the invention of Mr. J. R. Connon, and brought before the public by Messrs. Stirn & Lyon of New York, was shown at a meeting of the New York Amateur Society last month, and excited considerable interest. The two views show the camera mounted on a tripod and with sides of the box open, showing the interior mechanism. The box is mounted on the tripod in such a way as to bring the vertical axis of the lens directly over the tripod screw. As shown in the cut, the mechanism is operated clock work, but it has been simplified to operate by pulling a cord downward through a hole bored through the tripod screw. When this is done the winding-up spool of Eastman's rollable transparent film is rotated, which pulls the film off the supply spool on the opposite side over a small slit one-sixteenth of an inch wide, through which the view from the lens passes, and winds it up on the other spool. The exposure is made as the film travels over the slit.



While this is going on a guide or tension roll over which the film passes operates a small pulley on the outside, which in turn winds up a thread, passing around a large pulley attached to the bottom of the box. The motion of this guide roll in winding up the thread causes the whole camera to rotate in the opposite direction to that in which the film is moving, hence the exposure on the film is very rapid. By suitable means the slack of the operating string is taken up, and the degree of rotation regulated. It takes the pictures instantaneously. We have seen some curious pictures made with it. A punching device is arranged to prick the film after each exposure is made. It will take five whole circle pictures, ten half circles, and forty quarter circles, each $3\frac{1}{4}$ inches wide and of varying length according to the degree of the circle. It is said that it is very useful in surveying, and from pictures made with it maps are readily depicted. The camera is very compact and neatly made.

THE

AMERICAN AMATEUR PHOTOGRAPHER.

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EDITORIAL COMMENT.

Plates for Photo-Micrographical Work.—Having occasion recently to make a number of negatives from microscopic objects we naturally cast about for a brand of plates which would best answer the purpose for which the negatives were wanted, namely, the making of lantern slides. Several well-known makes of plates were tested, the result being greatly in favor of the Eastman Bromide Transparency plate. We found it a comparatively easy matter with these plates to obtain the density and clearness so necessary in this class of subjects. The objectives used varied from the one-half to the one-eighth inch with corresponding differences of exposure. The apparatus employed was the photo-micrographic camera of Bausch & Lomb, which we found to be well adapted to the purpose. The method which gave us the best results was to give an exposure somewhat longer than was judged necessary to get all the details and to develop with the ferrous-oxalate developer containing an appreciable per centage of bromide. In this way we obtained a number of negatives from which excellent lantern slides were subsequently made on the Eastman plate. Incidentally we may remark that we know of no branch of photographic work capable of giving greater pleasure and profit than photo-micrography.

A Proposed Lantern-Slide Interchange Club.—Several of our subscribers who own lanterns have written us recently regarding the formation of a Lantern-Slide Interchange Club somewhat on the lines of the Postal Photographic Club. The object of the club would be the interchange of slides between the members. Each member would be required to furnish to the common stock at least one set of slides during the year. In return he would receive for exhibition all the sets belonging to the club. When a set had completed its round it would be returned to the member who contributed it. The idea is simply to make the present system of slide exchanges between the various clubs available for private individuals who are not club members. We think the plan a feasible one and one which would be a source of much enjoyment to all concerned. It is perhaps too late to inaugurate such a club the present season, but it may not be amiss to call the attention of our readers to the plan, and to ask them to write us their opinions regarding it, in order that the club may be formed in time for the next season's lantern work. We therefore invite correspondence on the subject.

An English Opinion of Eikonogen.—Mr. C. Brangwin Barnes in the *Photographic News* thus summarizes the results of his experiments with eikonogen: "In conclusion, I must give my vote on the side of the friends of eikonogen, as I find it, in conjunction with soda, to be a quicker developer than pyro and soda; the addition of bromide is very rarely required; the minute detail is more marked, the half-tones are better, and, to crown all, the color, which closely resembles that obtained with ferrous-oxalate, is such that at least one-third the time is saved in printing."

Intense Negatives.—If any of our readers find it necessary to make negatives of the kind technically known as "Black and White," they will find that the use of a slow plate, the ferrous-oxalate developer and Wilde's bromo-iodine restrainer will yield unexceptional results even on gelatine plates. The restrainer is made as follows:

No. 1.—	Iodine,	15 grains.
	Alcohol,	2 ounces.
No. 2.—	Potassium bromide,	200 grains.
	Water,	2 ounces.

The solutions are mixed and one-half a dram of the mixture is added to each ounce of the developer. The plate must be exposed twice as long as would be necessary in ordinary work, and if the object is to produce negatives for photo-mechanical work the plates should be thinly coated with a slow emulsion and backed with sheets of dead black paper smeared with glycerine and squeegeed into optical contact.

Development, Quick or Slow.—As supplementary to our own remarks on this subject which will be found in another place, Mr. Pringle's remarks in a recent number of *Photography* are interesting. Mr. Pringle considers development rapid when it occupies from three to five minutes; slow when at least ten minutes are required to complete the process. As the result of his experiments, Mr. Pringle makes this deduction: "If two plates get equal exposures on a given subject, and if to one plate the full dose of developer be applied at once, while to the other only a portion of the full developer is applied at first, the rest being added by installments till the full quantity is reached, the latter plate will present more contrast between high lights and shadows than the former; the latter will have more "pluck," the former will lean more to half-tone and harmony." From this it follows that both methods have their legitimate use. Slight under-exposure is best treated by the slower method, while violent lighting is softened down by a more rapid development.

Developers for Instantaneous Exposures.—Liesegang recommends the following:

A.—Pyro,	1 ounce.
Distilled water,	7¾ ounces.
Ammonium bromide,	180 grains.
Nitric acid,	3 drops.
B.—Ammonia,	7 drams.
Water,	7 ounces.

C.—Dilute 1 dram of A with 30 drams of water.
D.—Dilute 1 dram of B with 15 drams of water.

To develop, take equal parts of C and D, but pour D over the plate first.

Selected Toning Baths.—

1.—Phosphate of soda for purple tones.

Chloride of gold,	1 grain.
Phosphate of soda,	20 grains.
Distilled water,	10 ounces.

This bath may be used at once, but it does not keep well.

2.—Tungstate of soda for brown tones.

Chloride of gold,	15 grains.
Tungstate of soda,	300 grains.
Distilled water (boiling),	15 ounces.

Can be used as soon as cold, and keeps fairly well. Add one ounce of stock bath to the old bath for each sheet of paper toned.

3.—Nitrate of uranium for purplish black tones.

Nitrate of uranium,	1 grain.
Chloride of gold,	1 grain.
Bicarbonate of soda,	20 grains.
Distilled water,	10 ounces.

Use as soon as mixed. All the free silver should be washed out of the prints before they are toned.

4.—Platinum toning bath.

Perchloride of platinum,	15 grains.
Bicarbonate of soda,	15 grains.
Distilled water,	15 ounces.

The prints must be printed very deeply, and one drop of nitric acid must be added, just before toning, for each grain of platinum used.

5.—Mercury bath for black tones.

Chloride of mercury,	2 grains.
Tartaric acid,	10 grains.
Hydrochloric acid,	5 drops.
Distilled water,	10 ounces.

Pictures Received.—A Halifax subscriber sends a number of prints on albumen paper for criticism. The prints are fairly well toned, but have a slight tendency to heaviness in the shadows owing to deep printing for black tones. The group of wheelmen is well done, but would have been improved pictorially if the camera had not been placed so squarely in front of the group. The same criticism applies to the view of H. M. S. "Pylades," which would have been vastly better had a raking instead of broadside view been taken. In other respects this is the best of the lot. "Cheapside, Market Day" is well done. The private residence is very poor in arrangement. The camera should have been placed further away and more to one side. The remaining views are of average merit. From Buffalo come a series of views of unequal merit. The Chautauqua scenes are well done. The water-side pavilion is badly over-exposed, and the charming little conception, "Playing Mother," would have been improved had it been more sharply focused. Mr. A. L. Colton sends us a moonlight view of the University of Michigan Observatory, the result of several hours' exposure on a quick plate, on a bright moonlight night. The print shows signs of over-exposure, and except for the curious shadow effects, due to the motion of the moon, it would be difficult to determine that the negative was not made by daylight. J. H. S. sends several White Mountain views, pleasing in tone, but not good in composition. Those in which there is any distance are badly over-exposed. The view of "Echo Lake" is well done, but J. H. S. should first learn what constitutes a "picture" before he can expect to do serious work with the camera.

The Rochester Camera Club will please accept our thanks for our invitation to attend the formal opening of the new club-rooms, on Friday, March 14th. With larger quarters the interest in the club will doubtless be greatly increased.

A New Use for the Camera.—A reference to our advertising pages will disclose a novel application of photography and one which may prove profitable to some of our readers. There would seem to be no great difficulty in obtaining good views of shop window displays, and it may be possible that some of our readers have already had some experience in the work. The negatives are wanted for reproduction and should be made with that end in view.

Agents for the Sale of The American Amateur Photographer.—We have received so many letters of inquiry regarding the possibility of obtaining monthly copies of the magazine through the dealers, that we are now making arrangements for that purpose. At present the following firms keep the monthly issues on sale:

BOSTON.—Barker & Starbird, Damrell & Upham, Dame, Stoddard & Kendall, Benj. French & Co., A. F. Boardman & Co. BROOKLYN.—The Brooklyn Camera Co., C. E. Hopkins. BUFFALO.—Tucker & Butts. CAMBRIDGE.—Amee Brothers. CHICAGO.—The Blair Camera Co. CINCINNATI.—Sheen & Simpkinson. DETROIT.—Allen Brothers. LOUISVILLE.—W. D. Gatchel. MINNEAPOLIS.—C. A. Hoffman & Brother. NEW YORK.—Brentano's, the Obrig Camera Co., R. H. Moran, W. C. Cullen, Loeber Brothers.' PITTSBURG.—W. S. Bell & Co. ATLANTA.—Theodore Schumann. DENVER.—R. M. Davis. SAN FRANCISCO.—Sam C. Partridge; John H. Dall. PORTLAND, OREGON.—Woodard, Clarke & Co. LOS ANGELES.—Howland & Chadwick. CLEVELAND.—Fowles & Slater.

This list will be added to from month to month, and dealers who are willing to carry the magazine in large or small quantities are requested to write to the home office for terms.

A New Photographic Club on the Pacific Coast.—A meeting was held at the State Supreme Court Rooms, San Francisco, on March 18th, for the purpose of organizing a club, which, in the language of the invitation sent to us, shall equal "the celebrated camera clubs of Boston, New York, Chicago, and other cities." It is proposed to admit ladies to all the privileges of active membership, and to secure and completely equip suitable rooms for all the needs of such an organization. We do not as yet know the result of the meeting, and we are equally ignorant as to the need of the proposed club, but the names attached to the letter of invitation are a sufficient guarantee of the serious purpose of those who have the matter in charge.

Portraiture by Gaslight.—The Welsbach Gas Light Company have recently fitted up a room at their factory in Gloucester, N. J., for photographing with their incandescent gas light. . We hope shortly to give full particulars of the methods employed.

An Ammonio-nitrate Emulsion.—At a recent meeting of the Philadelphia Photographic Society, Mr. William Bell read a paper on "Emulsions," from which we make the following extract:

AMMONIA-NITRATE EMULSION.

No. 1.	Boiled water,	1 ounce.
	Iodide ammonium,	5 grains.
No. 2.	Chloride ammonium,	20 grains.
	Water,	4 drams
	Acid, nitric, a drop or two to render the solution acid.	
No. 3.	Nitrate silver,	60 grains.
	Water,	4 dams.

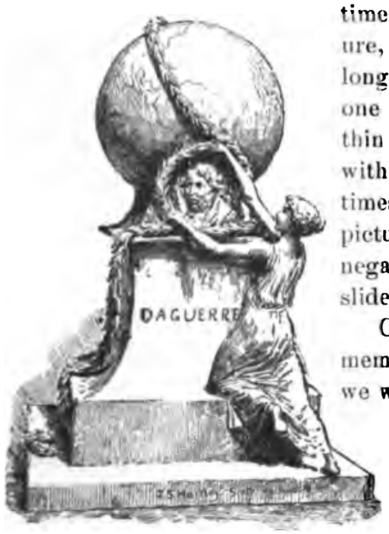
To the nitrate of silver dissolved in the water (No. 3) add, drop by drop, the solution of iodide ammonium (No. 1), until the precipitate of iodide of silver formed ceases to dissolve in the solution. Then pour in the solution of chloride of ammonium (No. 2), wash the chloride silver formed with three separate waters, draining each time; then add some pieces of broken glass to the moist mass, and then 16 grains of Nelson's No. 2 gelatine, and dissolve with gentle heat (temp. 90°-100°). Shake well and add the following solution: Water, 4 drams; bromide potassium, 43 grains; liquor ammonia, ½ dram. Pour this solution at one time into the bottle containing the melted gelatine and chloride of silver. Cork the bottle

to retain the ammonia. Keep at a temperature of 90° for fifteen to twenty minutes. Test the emulsion by a drop on glass, looking through by transmitted light from a match to see if all reddish color is gone. When this has disappeared, and the emulsion viewed by transmitted light is grayish blue or green in color, the heating has proceeded far enough; and then 120 grains of Heinrich's gelatine (previously softened in water and melted at a temperature higher than 90°) is added to the emulsion. This is to be well shaken, and then allowed to cool by gelatinizing it slowly upon the sides of the bottle. Let it stand six hours. Re-melt at a temperature of 100°, gelatinizing again upon the bottle. Allow to stand six hours, and melt once more. Then pour out into a dish and allow to cool and set; when cold place on a clean cloth (mesh 1-80 inch), squeezed through, the finely-divided mass well washed, drained, and pressed under weight to expel excess of water, re-melted, filtered through white silk, and then coated on glass. The final amount should not be more than 3 ounces. If more, then the gelatine has absorbed too much water in washing; to avoid this, press longer.

Eikonogen Developer for Lantern Slides.—Later experiments with eikonogen show that while it works somewhat slower without the addition of an alkali, yet it gives better results, particularly with slow lantern slide plates. The formula that gives good results is as follows:

Eikonogen,	**10 grains.**
Sodium Sulphite (crystals),	**20 grains.**
Distilled or rain water,	**1 ounce.**

This forms a developer which will develop in succession six or seven lantern slide plates without stain, and a trifle quicker than the ordinary hydroquinone developer. It also allows for any trifling over-exposure that may have been made. In making lantern slides it is advisable to over-expose slightly in order to bring out the details in the dense portion of the negatives. Until some practice is acquired, trial exposures must be made to find the correct time. A thin negative requires a short exposure, a dense negative two or three times as long, and when the negative is over-dense in one part, a brief exposure may be made for the thin portion, which is then masked or shielded with a piece of paper, and an exposure five times as long continued. On development the picture should come out evenly. Usually thin negatives, full of detail, make the best lantern slides.



Contributions by amateurs to the Daguerre memorial monument have not been as large as we wish they might, but there is yet time. We trust many will be glad to contribute a dollar for the sake of the honor and of having their names perpetuated. Any contributions sent to us will be forwarded to the treasurer of the New York committee. A clay model of the monument has been on exhibition for a few weeks past at the studio of the designer and sculptor in New York, Mr. J. Scott Hartley, and is much admired by the artists and photographers who have seen it. The general committee has issued a circular, embellished with an artistic engraving of the monument, giving also an account of its origin and where it is to be located. It will be unveiled next summer at Washington at the time of the next annual convention of the Photographers' Association of America. The general committee is: H. McMichael, President; O. P. Scott, G. H. Hastings, J. M. Appleton, and G. M. Carlisle, M.D. The local New York committee is: J. Wells Champney, President; H. Littlejohn, Treasurer; Dr. E. L. Wilson, Dr. A. H. Elliott, W. I. Lincoln Adams. It will fittingly celebrate the close of the first half century of photography to erect in honor of Daguerre's work such a permanent and artistic memorial. Through the courtesy of Mr. W. I. Lincoln Adams, of the *Photographic Times*, we are enabled to give a cut of the first draft of the design, which, we learn, has been considerably modified and improved.

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SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

AMERICAN INSTITUTE—PHOTOGRAPHIC SECTION.—*Comments and Criticism of Slides made by Members and Friends of the Institute—Also Tests of the Comparative Intensity of the Light that may be produced with Ordinary Kerosene Oil with that of the Lime Light.*—At the informal meeting, February 19th, the Vice-President, J. B. Gardner, called the section to order and stated that the chief business of the evening was the selection of slides to be used at the regular meeting, March 4th, illustrative of New York City and some of its surroundings; also to examine and test an optical lantern, the invention of J. B. Colt, that could be used either with the lime light or with ordinary kerosene oil. The contribution of slides (more than a hundred in all) promised for the above-named meeting was from Messrs. A. L. Simpson, S. C. Roche, Charles Simpson, D. L. Elmendorf, I. R. Riker, J. B. Colt, A. D. Fisk, and H. J. Newton. The audience was composed mostly of experts in some one of the numerous branches of photography, especially that branch interested in the exhibition and making of slides and the construction of optical lanterns. The testing of Mr. Colt's lantern and the examination of slides occupied about two hours—the first hour in demonstrating the intensity of light that could be generated with oil when connected with a mechanical contrivance devised by Mr. Colt, and in some respects differing from all other lanterns in the market. The second hour was occupied in contrasting the lime light with that of the oil, and though it was plainly shown that the former was better adapted for large halls and over-intensified positives, it was also proven that the oil light was admirably adapted for parlor exhibitions and college class-room instruction; also for slides whose chief excellence consisted in their delicacy of light and shadow, or, in other words, not such slides as can only be penetrated by the most intense sunlight and which are most apt to represent a summer landscape only in her winter garb. As regards the various comments on the slides shown, it would be quite out of place to repeat here, as they were mostly apropos to those who took part in the meeting. That the work of the evening was a pleasant and profitable one to all was aptly expressed by marked attention and in the hearty vote of thanks tendered to Mr. J. B. Colt for his service rendered in aiding to accomplish the special object for which the meeting was called. Immediately following the above resolution the hour for closing was announced and the chairman declared the section adjourned. The meeting on March 4th was an interesting exhibition of lantern slides, including the work mostly of Mr. Charles Simpson and Mr. A. L. Simpson. Mr. Fiske worked the lantern.

On March 5th Mr. John B. Gardner, the chairman of the executive committee, died quite suddenly at the age of sixty-five. He had been suffering from a brief attack of pneumonia. He had been identified with the interests of the section for a number of years and was one of its prominent members. Through his influence a pair of optical lanterns were acquired by the section for use in its interesting lantern exhibitions. His specialty was the making of photographs on wood, which he did most expertly for quite a clientage of illustrated papers. He was an expert photographer, genial in disposition, and always ready to aid amateurs. At the informal meeting of the section, on March 19th, several of his friends made brief addresses on his work. Two weeks after Mr. Gardner's death his son died of the same disease, having caught cold at the time of his father's funeral. The firm of J. B. Gardner & Son was thus unexpectedly terminated.

Lowell Camera Club.—The Lowell Club has been busy this winter devoting a good deal of time to lantern-slide making—a subject new to most of the members. The President, Mr. William P. Atwood, a practical chemist and enthusiastic amateur photographer, has done much to bring about this interest in slide making. He has experimented with the new developers, tested the "best" formulas as they have come out, and reported his results to the club. Others have followed his lead and considerable success has been attained. It is necessary to make slides to fully appreciate them. A good slide affords no little pleasure and satisfaction to the maker, as it is brought out upon the screen. Five of the nine sets of slides in the New England Lantern Slide Exchange have been exhibited before the club. The Providence and New Britain sets were shown at the meeting held February 25th, and were much enjoyed by the members and friends. Many of these slides are of excellent quality. Letters from each of these clubs, explaining their methods of work were read. They were very interesting and instructive, and furnished some good ideas. The New Britain Club recommended varnishing the slides with collodion varnish. From tests made it is found to work well. It seems to give a greater brilliancy to the picture. The club is at work on a set of slides illustrating the city of Lowell.

Providence Camera Club.—The sixth annual meeting was held March 1st. The Constitution and By-Laws having failed to meet all requirements, several amendments were passed, making regulations better suited to the needs of the club. After closing the business of the old year by the presentation of the annual reports of officers, the election of officers for the ensuing year was held, resulting as follows: President, R. Clinton Fuller; Vice-President, L. L. Anderström; Recording Secretary, Charles A. Stoddard; Corresponding Secretary, J. Eliot Davison; Treasurer, Arthur B. Ladd; Librarian, William A. Chandler. An Executive Committee, consisting of the President, Secretaries, and Treasurer, *ex-officio*, and the following elected from the club: Henry J. Reynolds, William L. Coop, L. L. Anderström, Henry H. Davison, Joseph A. Miller, Jr. After the adjournment of the meeting the first work of the new year was begun in a struggle over a box of cigars kindly opened for the occasion by President Fuller. At a meeting of the Executive Committee held later, sub-committees were appointed: one on lantern and lantern slides, one on the care of the rooms, and one on photographic work, the duties of the latter committee being to provide subjects for discussion and experiment at the meetings. It was decided to have the rooms open every Tuesday and Saturday evening, when one member of the Executive Committee will be present, so that on those evenings members will be sure to find some one at the rooms. It was also decided to have the Annual Exhibition in May. The club has made material progress during the past year, having got fairly settled down to work in its new rooms, acquired new furniture and apparatus and made satisfactory gains in membership. The New England Lantern Slide Exchange organized by the club has proved very popular with the members and their friends, about sixty of whom were present at the exhibition of the sets by the Camera Club of Hartford and the Photographic Society of Waterbury. The slides of "In and Around Hartford" can hardly be criticised, as they do not show work by the members of the club, the entire set being by the wet collodion process. The showing of the Waterbury set the same evening gave a good opportunity to compare the results of the wet and dry processes as applied to slide work. In this case the gelatine plates took all the honors. The Waterbury set is by far the best in the Exchange that has yet come to Providence. Many of the views were beautiful pictures, well worth an examination from an artistic standpoint, while the technical parts were exceedingly well done. Mr. Pancoast evidently labored faithfully in the making of this set, which deserved more descriptive matter than accompanied it. At this exhibition was tried, for the first time in Providence, the making of a photograph of the audience and showing the picture on the screen at the close of the evening's entertainment. Mr. Reynolds, assisted by Mr. Stoddard and a flash lamp made a complete success of the undertaking, using, very appropriately, a "Waterbury Detective" camera. The plate used was a Cramer 40; a double charge of magnesium powder was flashed, the lantern screen (a hard-finished wall) serving as a reflector. The plate and slide were developed with eikonogen. A cold fixing bath delayed matters some, but a tin tray and convenient gas-jet remedied that, and the slide was ready before the exhibition in the club-room was finished.

The Brooklyn Society of Amateur Photographers.—The society held their second field-day on February 22d, at which time they made a trip to Astoria, Steinway, and Flushing, Long Island. It was about a ten-mile trip, and many pretty views were taken on the way. The society has had two lantern exhibitions during the past five weeks, both being complete successes. At the first about sixty slides were shown, and at the second about one hundred slides graced the screen. The proceeds are to be used in paying for the lantern. On April 8th the society will give their second private exhibition of photos, and on April 9th and 10th the rooms will be open to the public. March 22d will be the anniversary of our organization, at which time there will be a social gathering of the members.

Hartford Camera Club.—The regular monthly meeting was held in the club rooms, Monday evening, March 10, 1890, with President Parmele in the chair. The regular routine business was soon dispatched, and the club took up the subject of "Lenses" for discussion. It was opened by Mr. A. H. Pitkin with a very interesting paper, from which are given a few extracts:

"Photographic lenses are divided into two general classes—namely, portrait and view lenses. These are subdivided into numerous classes. Portrait lenses always consist of two or more combinations; generally two, *i.e.*, a front combination and a back combination. These combinations are not usually symmetrical, and one of them often has a negative focus. They vary greatly in rapidity, flatness of field, depth of focus, brilliancy of image, etc. The greater the gain in rapidity, the greater the sacrifice of flatness of field and depth of focus. There is probably no lens made that for all-around work, viz., views, portraits, groups, shutter work, studies, etc., for a plate ranging from 7x5 to 10x8, that can be compared with a Dallmeyer 3 D. As this is a lens especially worthy your attention, I will say, it can be bought new in this country for $78, occasionally second-hand for about $60. In London the price is £9, 10 s. View lenses are divided into three general classes—single combinations, double combinations, and triplets. The latter class is now very little used, it being superseded by the various lenses of two symmetrical combinations. Both single and double combination series are made, for ordinary work, about 60°, and for wide angle about 90°. For purely landscape work no lens equals the single combination. From their having a less number of reflecting surfaces we obtain with them great brilliancy and crispness of definition. They are, however, unfit for architectural subjects or interiors, for marginal lines, which are straight in the subject, become curved by their use. Several years ago was introduced a new series of lenses, known as the Rapid Rectilinear Lenses; rapid, as compared with the then existing form of view lenses; and rectilinear, because of reproducing straight lines straight. These lenses are very valuable for all-around viewing. They have remarkable depth of focus, great flatness of field, a working intensity of f—8, freedom from flare or central spot, are well corrected, and contain more good qualities combined, for general viewing, than any other series of lenses. The use of wide-angle view lenses is admissible in but few cases, *i.e.*, for confined situations on architectural subjects, or for interiors; and then the results obtained are far from truthful to the normal vision. In regard to the proper selection of a lens, a prominent optician says: 'View lenses should have an equivalent focus of at least the largest dimension of the plate used, while portrait lenses should be double the focal length of that dimension.' For a plate 5 x 7 the view lens should have an equivalent focus of seven or more inches, and the portrait lens about fourteen inches. These dimensions give the most correct perspective and greatest freedom from distortion. Size of image and angle of view desired should govern choice of focal length. If an object seen on the ground glass through a lens of six-inch focus is one inch high, the same object seen from the same distance will be two inches high on the ground glass if seen through a lens of twelve-inch focus. Hence the choice of focal length of lens will be governed by size of image desired. The angle of view depicted depends upon the relation of focal length to field of view. This angle of view is readily computed if length of base line of view and focal length of lens are known; for example, on a 5 x 7 plate with a lens of seven-inch focus the angle of view will be found as follows: Draw a horizontal line seven inches long representing base line of view; bisect it, and from point of bisection drop a perpendicular line the same length as focal length of lens, seven inches. Join these three extremities, and with a protractor measure the angle included, which will be found to be 53°. If it is desirable to include a wider angle on the same sized plate a lens of shorter focus must be used. But the use of lenses of short focal length, in proportion to size of plate, produces violent perspective; moreover, objects in the foreground are magnified, while the distance is dwarfed. Also by their use the angle of view may be as great as 90°, which is about 50 per cent. more than normal vision comprehends without moving the eyes or head. It is safe to assert that the most truthful results in perspective are obtained by the use of the most artistic angle of view, which varies from about 20° to 40°. The rapidity of lenses depends upon the ratio of working aperture to focal length. This is ascertained by dividing the equivalent focus by diameter of working aperture. A lens of twelve-inch focus and two-inch diaphragm would have an intensity ratio of 1—6, or the more common way of expressing it, f—6. Suppose we insert in this lens a diaphragm of 3-4 inch diameter; we find that 12 ÷ 3-4 = 16, or f—16 is the value of that 3-4-inch stop. Now f—16 means the same, whether applied to a portrait, a view, a double or a single lens. We know that the relation of exposure between two stops varies inversely as the squares of their diameters. Assuming two seconds to be the correct exposure when using a stop of two inch diameter, then the time required with a stop of one-inch diameter will be inversely, as 2 × 2 : 1 × 1 = 4. Let us compare two lenses of entirely different intensities. The ratio of a lens of one-inch diameter and six-inch focus is f—6 or 1—6; that of a lens of 1¼-inch diameter and ten-inch focus is f—8 or 1—8. The ratios known, it is only necessary to multiply each denominator by itself to find their relative rapidities. 6 × 6 = 36, 8 × 8 = 64; therefore if the lens of six-inch focus requires thirty-six seconds exposure, the lens of ten-inch focus will require sixty-four seconds exposure."

Numerous questions relative to some particular points were asked by the members, which Mr. Pitkin explained at length. Mr. George H. Peters gave a short but very interesting talk upon the construction of the various kinds of lenses and upon optical glass in general. The subject for the next meeting was announced as "Flash Lights," at which meeting some of the most successful of our members in that particular branch will give a practical illustration of their mode of procedure.

Hoboken Camera Club.—At the regular meeting held in March, the following officers were elected for the coming year: President, A. J. Thomas; Vice-President, F. A. Muench; Secretary, George Steljes; Treasurer, Charles L. A. Beckers; Custodian, A. C. Ruprecht; Trustees, A. Beyer, George E. Mott, E. Gritten; Instruction Committee, W. Allen, F. Schneider. Literary Committee, George E. Mott, P. C. Muller. Much interest was taken in the election by a large attendance. The project of building a new club-house is moving steadily on, and the fund is being raised to this end. The first anniversary of the society's existence was celebrated by a supper at Nageli's, on March 22d. The club now numbers thirty-two active and four honorary members.

Brooklyn Institute, Photographic Section.—A very largely attended meeting of the Department of Photography at the Brooklyn Institute was held March 14th. Professor Arthur H. Elliott, of Columbia College, active editor of the *Photographic Bulletin* and a prominent exponent of photographic progress, read a compact and interesting paper on "The Sulphites in Photography." Professor Elliott not only considered sulphites from the purely chemical side, describing their relative status in priority of discovery, but analyzed their application to the processes of photography and gave many suggestions in relation to modern processes. The paper was technically one of the most valuable that have been given before this popular department of the Institute. President Black exhibited a series of lantern views by Horace Warren Gridley, one of the most ingenious and successful of American connoisseurs in photography. Mr. Gridley, who is well known in Brooklyn, where he formerly resided, has carried away many of the honors at recent exhibitions abroad. The pictures shown last night included various views of Switzerland and Italy, with some glimpses of luxuriant Florida. Professor Franklin W. Hooper displayed some colored slides of flower studies, and a few general views by Mr. Kingman were much enjoyed. The department has organized classes in retouching and other classes are in formation. An informal exhibition of prints is being planned for next month.

Portland, Me., Camera Club.—The interest in amateur photography at Portland, Me., has finally crystallized into the formation of a camera club. Preliminary meetings were held for organization, and Friday, March 7th, the club started with eighteen charter members. According to an agreement with the Portland Society of Art, these gentlemen were admitted to membership in that society, and an apartment in its building given them for work-room, the Camera Club defraying the expense of fitting it up. The room is divided into two—an outer, with lockers for storage of plates and impedimenta, and from it, through double doors, is entered the dark-room, well supplied with sinks, water on tap, and all the other requisites for photo work. The officers of the club are: President, Frank H. Little; Vice-President, H. M. Bailey; Secretary, Dr. Stanley P. Warren; Treasurer, Philip G. Brown; Executive Committee, the President, and F. M. Lawrence, P. G. Brown, Edward W. Kent, and Dr. G. E. Dow. The gentlemen composing the club are all enthusiasts in shutter work, with longer or shorter experience in its fascinations. Each one *knows* that his formula for developer is the only one worth using, though willing to hear arguments upon pyro, hydrochinon, or eikonogen, as the case may be. The club desires to be admitted into the brotherhood, and herewith makes its introductory bow to its seniors. One of the club's principles is to extend its dark-room facilities to strangers who may be in the city, either passing through it as travelers or enjoying the beauties of Maine's summer resorts. Call upon the secretary, in person or by letter, and any courtesies that he can render will be gladly offered.

The Photographic Society of Philadelphia.—The chief item of interest connected with the regular monthly meeting, held Wednesday evening, March 5th, was the discussion which followed the reading of Mr. Bell's paper on "Emulsions." Probably the first to bring the gelatine plate into use in this country was Mr. Bates, the late president of the society. Mr. George W. Hewitt was another early worker, and he made some exceedingly good plates. Some discussion followed concerning orthochromatic plates and the color screen, of which several varieties were shown. The chairman of the lantern slide committee reported progress in the preparations for the spring exhibition. The catalogue of the society's library has been completed and shows the club to be in possession of an exceptionally complete collection of books relating to photography.

The Society of Amateur Photographers of New York.—On Friday evening, February 28th, the regular monthly exhibition of lantern slides was held at the rooms of the society, 122 West Thirty-Sixth Street, and included nearly seventy slides contributed to the Slide Interchange by the St. Louis Camera Club and the work of several members of the society. In the St. Louis Club Mr. R. E. M. Bain, Mr. Dunn, and a few others had some excellent landscapes and figure compositions. Exhibitors in the society were Messrs. Plimpton, Roumage, Vilmar, Rogers, Warrin (who had several views in Bermuda), Dr. E. C. Bolles (having a number of interesting slides of weeds, cobwebs, flowers, etc.), and Mr. Murray. All were very creditable. The lantern was operated by Messrs. Beach and A. L. Simpson.

March 11th.—The regular monthly meeting was held on Tuesday evening, on date mentioned, C. W. Canfield, President, in the chair. Mr. G. D. Milburn exhibited a 5x7 Kodak folding camera, explaining its different features, and also a 4x5 Kodak camera and a Hemperley Magazine Flash Lamp, stating that it was very compact, effective, simple, and always ready to operate. Mr. Wallace Goold Levison read an extensive paper on the "Photography of Self-Luminous Subjects," illustrating it with about sixty lantern slides. The views were chiefly of fire-work displays, and presented some novel effects. Among his latest was the photographing of a steel watch-spring burning in oxygen gas. Another view of a grand display of fire-works from the lower part of the Eiffel Tower was very good, made by Mr. Loude, a French photographer.

Miss Catherine Weed Barnes read a practical paper on "Helps in the Studio," full of interesting points. Mr. Vilmar exhibited a Turnover Magazine Detective Camera made in Chicago. Mr. Beach showed a "Bain" lantern slide mat plate to be used in cutting out slide mats, and demonstrated its use before the audience. The paper is simply folded, laid on the plate, and cut out with a pair of scissors. He also exhibited a new style of Bausch & Lomb shutter (see March number), very beautifully made, which was very favorably received; a Simplex shutter invented by Mr. R. D. Cleveland of Minneapolis, Minn., possessing novel features for time and instantaneous movements (see March number); the Dossert camera shutter, and a new camera for making panoramic photographs, sent by Mr. C. P. Stirn (see illustration, page 143).

The President announced that new quarters had been secured at No. 12 West Thirty-First Street, formerly the home of the Academy of Medicine, where the society would move about May 1st next. The improvements would include a sky-light, several dark-rooms, and a larger and higher hall than the present rooms. Plans have been drawn up by an architect to arrange the floors to the best advantage. Special private dark-rooms are to be rented, which it is thought will become a popular feature. All the dark-rooms will be equipped with all the modern conveniences and will be thoroughly ventilated. The annual meeting of the society occurs on April 8th.

Mr. F. Vilmar, of the society, entertained the Nassua Boat Club, of which he is President, with a lantern-slide exhibition of his own, on Saturday evening, March 22d.

The regular monthly exhibition of lantern slides was held on Friday evening, March 28th, when the slides of the New Orleans Camera Club and views of western scenery, by Mr. H. H. Bennett, of Wisconsin, were shown. The nominations of officers for the coming society year include James H. Stebbins, Jr., President; A. L. Simpson, Vice-President; T. J. Burton, Recording Secretary; F. C. Beach, Corresponding Secretary; C. C. Roumage, Treasurer; L. B. Schram, R. L. Bracklow, Ferdinand Ruppert, Robert A. Dayton, J. V. Black, E. Warrin, F. Vilmar, Directors.

The Brooklyn Camera Club held its first public exhibition March 17-20, in which about 350 prints were exhibited. The committee had spent considerable time in decorating the rooms, and when the exhibition opened the rooms presented a gala appearance. The exhibition was formally opened to the members of the club and their friends on Monday evening, March 17th, at which time Mr. Everett E. Truette gave a lantern-slide exhibition on Italy. About 90 slides, principally of Rome, Pompeii, and Venice, were shown, and a brief description of each was given. Some of the pictures gave great satisfaction and called forth considerable applause. There was a very large attendance and the affair was a complete success.

Through the week many people visited the exhibition, and on Thursday was the regular meeting of the club, at which time Mr. W. G. Chase gave another lantern-slide exhibition on Florida, illustrating a recent trip through the phosphate lands, on which he carried a No 2 Kodak. Mr. Chase was remarkably successful with the Kodak and gave one of the most novel and interesting exhibits that the club has ever had. Many of the slides were greeted with bursts of applause, and the description of the privations which the exhibitor had passed through aroused considerable merriment. At this meeting of the club a ballot was taken on the several photographs of the exhibition to decide who should receive the first and second prizes. The first prize, a copy of "Wilson's Photographics," was awarded to Mr. H. R. Hallett, the president, for a print on salted paper of a forest scene near Newton. The detail in this picture was very soft, and at the same time the contrast between the long view of a shaded road in the forest, on the one side, and across a lake on the other, were very successfully brought out. The second prize, one year's subscription to the AMERICAN AMATEUR PHOTOGRAPHER, was awarded to Mr. E. Wrightington for a view of a rustic bridge.

Among the exhibitors, whose work was specially interesting, may be mentioned W. G. Chase, H. H. Robinson, Miss Helen Richards, Miss Rowe, Miss Mabelle Armstrong, Mrs. Crocker, Mrs. E. P. Stone, W. B. Lee, Carl Moore, Mr. Rothwell, H. R. Hallett, E. E. Truette, Mr. Thorndike, and Mr. McGregor. On the whole the exhibition was very successful for such a young club.

St. Louis Camera Club.—The club has recently purchased a very fine optical lantern for use in its regular exhibitions. Mr. Robert E. M. Bain, President of the club, read a paper on "Development," at the meeting on March 18th, accompanying it with a practical demonstration. He has been honored with the presidency of the club for the past five years.

Peekskill Camera Club.—The first exhibition of photographs by this club was held during the week ending March 22d, and exceeded the expectations of the officers in point of excellence and numbers. About 90 frames were hung, containing an average of 325 prints, which was all the work of the club. The list of prize winners follow: Landscapes—best 3, Fred H. Southard; best 1, Arthur J. Birdsey. Portraits—best 3, Mrs. Dr. P. H. Mason. Interiors—best 3, Miss Robertson. Flash lights—best 3, Mrs. Dr. P. H. Mason; excellent, Fred H. Southard. Snap shots—best 3, Asbury Barker. Outdoor groups—best 3, Harry B. Miller; best 1, Miss Robertson. Transparencies—John D. Prince. Special work—Blue Prints—D. C. Hasbrouck.

On Tuesday evening there was a lantern-slide entertainment comprising views of Peekskill and vicinity and a series of fine slides loaned by the New York Society of Amateur Photographers and a few from English negatives. President Mason made a very felicitous address at the beginning of the entertainment and explained each picture as it was thrown upon the screen. The prize for the best lantern slide pictures was awarded to Dr. E. D. Fuller. Another screen exhibition was given Friday evening before a large and enthusiastic audience. It was equally as successful and enjoyable as the first. The membership of the club is at present 26.

New York Camera Club.—On the evening of March 17th, Mr. Frank LaManna, President of the Brooklyn Camera Club, gave a lantern-slide exhibition on Paris and the Exposition before the club, which was very interesting. Other views in Brittany were shown. On the previous Monday, the 10th, Professor A. D. F. Hamlin, of Columbia College, lectured on "The Bosphorous and Its Villages," illustrated with lantern slides.

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CORRESPONDENCE.

THE AMATEUR PHOTOGRAPHER IN EUROPE.

Having told you about the Paris Exhibition, and its interest to the photographic amateur, there is but little to add in that connection. In Paris there are a large number of amateurs. They do not however dare to use their cameras in the public streets. They go to the country, and even there, the police warn them not to take pictures of forbidden things. They must not "shoot" an inoffensive pair of lovers wandering along the highways or lovingly ensconsed in some pretty nook near the river bank, because the act might tend to a breach of the peace, and the irate swain cause the amateur either loss, or trouble. They may not fire their cameras at any miscellaneous crowd, except it be understood that the crowd is to be allowed to inspect the plate *immediately;* and a promise is given that every individual of that crowd is to have, "free gratis," a copy of the resultant print. In short the French amateur is subject to a lot of unwritten laws, not printed in any of the statute books, but solely promulgated by the public guardians of the peace, at their own sweet wills, and according to their own ideas on the subject, at the time the "offense" may be committed. It is the general testimony of French dealers in photographic materials, that amateurs are too much restricted in the free use of their cameras, by the red tape of officials in the employ of the French republic. While a republic in name France is way behind the times in everything that makes our own republic a desirable place for the amateur photographer.

In Switzerland, another republic, the amateur can do pretty much as he pleases with his camera. If parties object to the pointing of a camera, at them, the gentleman amateur usually desists. A foreign amateur is usually given free range, and only once in a while, in Switzerland, are tricks played upon him. An amateur in Europe, unless thoroughly posted, can seldom find the headquarters of an amateur club. Hence if he would develop a few plates, he must apply to a local photographer for the use of a dark-room. He might do the work at his hotel; but only occasionally are to be found such conveniences in the shape of water and vessels, as would render such work easy or desirable. An amateur friend told me of a Swiss experience he had. He had been through the Alps, and was loaded down with undeveloped plates. He was about to cross the frontier, and knowing the vagaries of some of the custom-house people, thought it safer to develop his plates at Zurich. He applied to a local photographer and bargained for the privilege of developing some plates. He paid two dollars a day for the use of a dark-room, and *no* running water. Had to pump every bit he used. He was a couple of days, and then wishing to send a few prints to some friends he had met in the mountains, asked the *local* to make them for him. The "local" agreed to do so, and in a few days sent the *eight* prints (6 x 8) to the amateur at his hotel, with a bill for twelve dollars for the printing, and four dollars more for paper, chemicals, etc., used in the operation! My amateur friend said he paid the bill, but never after that (and he visits those and other foreign parts every year) did he apply to a "local" for aid or comfort in the printing line.

In Italy the amateur is beset by officials who want to know what he is shooting off his camera for, and what he has been firing at. Generally a very little explanation is sufficient, nevertheless restriction is carefully enforced—especially when frontier forts are the objects aimed at. As a rule there is a much larger liberty to the amateur in Italy than in France, but there are fewer native amateurs. The dealers in photographic material in some of the larger Italian cities, say that the native amateurs do not as a rule, develop their own plates, or make their own prints. They get this work done by professionals, because very few of them have home conveniences. Only the wealthy have income enough to fit up their own dark-rooms, but when they do, they fit them up with every known convenience except perhaps that of running water, which as a rule, on the continent, is only to be had on the ground floors.

In Austria, the home of Vogel, and the *habitat*, so to speak, of a school of scientific photographic manipulators, the amateurs are not especially happy in their movements. They may take pictures. They may make experiments, but they have to be very careful not to offend the peculiar prejudices of the people, who do not fancy being pictured by a strange man carrying a camera, and setting it up at every street corner. For this reason the American and English detective or quick shooting cameras are now very much in demand by the amateur who travels in Austria, and takes pictures without much caring whether he gets a good focus or not.

In Germany, Kaiser Wilhelm's dominions, there is far more freedom, and possibly many more amateurs. If so the amateurs are well-to-do people. No poor man can afford to make pictures just for fun. He lacks facilities, lacks running water generally, and has little time to spare for experimenting. There are exceptions, and brave ones, too; amateurs who have made fine pictures under very adverse circumstances, but whose energy only carried them through where others would be discouraged by the difficulties of doing good work. A German amateur must satisfy himself (and his standard is a high one), or his prints go to a professional.

In Bavaria the amateur, especially in Munich, is happier. He can have facilities at very moderate cost. He is usually an artist. He delights in artistic pictures, and has several clubs—some very exclusive—and others that meet in "Beer Kellars" on specified evenings; when they drink "*maasses*" of beer, compare notes on manipulations, or exhibit pictures, which each member is called upon to produce at the command of the club committee for the time being. There is another more exclusive amateur photograph club in Munich, about which very little could be learned, except that that they own a well fitted up dark-room, used, with chemicals, etc., alternately by the members. The rules of this club are very strict, and the dues quite large. Those dues cover everything, however, and each member has free use of all, under regulations which only restrict his time, whenever it is his turn or right, to use the conveniences provided by the club. This club is somewhat unsocial. The members carry their finished work home, and it is said, seldom is a picture seen again in the club-room after the producing member has finished his operations. The dealer in photographic materials, who gave this information, said he once sold quite a good-deal of the Beach Developer to this club, but now they were using hydroquinone.

(*To be continued.*)

QUERIES.

19.—E. Q. G. asks for a method of producing brown tones in lantern slides.

20.—H. C. D. asks for a formula for a mountant that will not sour or mould.

ANSWERS.

19.—The character of the tone in slides depends largely upon the length of exposure and the developer used. Short exposures with strong development yield black tones. Prolonged exposure with a modified developer as a rule give warmer tones. A very good brown tone may be obtained on any of the lantern slide plates by giving an exposure at least double that necessary to give full detail with the ordinary unrestrained ferrous-oxalate developer and adding a large percentage of potassic bromide. Still warmer tones may be obtained by a long exposure and the addition to the developer of four grains of ammonium chloride to the ounce of solution. Still another method is to stop the development before sufficient density is had, and after fixing and washing to intensify with the usual mercury and sulphite of soda intensifier.

20.—Arrowroot,	150 grains.
Gelatine,	150 grains.
Distilled water,	3 ounces.
Dissolve by gentle heat, and when cool add	
Alcohol,	2¼ drams.
Carbolic acid,	3 drops.

BOOKS AND EXCHANGES.

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA: LIBRARY CATALOGUE.

To the best of our belief the Philadelphia society is the first to issue a catalogue of its collection of books. The present list, embracing something over one hundred titles, is the result of the work of Dr. Ellerslie Wallace, and it shows the society to be in possession of a fairly well stocked photographic library, although we know of one or two private libraries which exceed it in size and completeness. Some important books are missing from the list, notably Eder's latest work on "Bromide Emulsions," Davanne's "Photographie," and Hunt's "Researches on Light." A copy of the latter work should be in the collection of every society, but we very much doubt if a copy can now be procured. Our own copy was accidentally stumbled upon on the shelves of a second-hand book stall in London and purchased for a mere song. In periodical literature the society's library is exceptionally strong, and we envy the members the power which this collection of photographic literature places within easy reach. They surely have no excuse for re-discovering old processes.

The March number of Liesegang's *Der Amateur Photograph* contains two helpful articles on "The Dark-Room" and "Home-Made Double Slides," and the first of a series of papers on "Development with Hydrochinon and Eikonogen."

The March *Photographic Art Journal* contains a photogravure print, "In Great Yarmouth Harbor," from a copper-plate etched by Dr. P. H. Emerson, who has lately been studying the process with good results, as the print before us proves. The subject was expressly chosen to show how much could be done in this process to render a wide range of tones. The printing of the plate is done in a style which is not often seen in America.

JAHRBUCH FUR PHOTOGRAPHIE UND REPRODUCTIONS TECHNIK FUR DAS JAHR, 1890.

We are almost prepared to say that Dr. Eder's Year Book is the most valuable of all. Perhaps we might say so if it were published in English. The articles certainly take a higher flight than the general run of those which appear in our annuals, and treat of many things which are little known on this side the water. The illustrations are, for the most part, good, and the book is one which will repay careful study.

We have received the neatly-printed "Constitution and By-Laws" of the Lynn Camera Club, the work of one of the members, which shows that the club knows how to govern itself.

PRACTICAL PHOTO-MICROGRAPHY. By Andrew Pringle. Pp. 1—183; $2.50. The Scovill & Adams Co., New York; 1890.

A thoroughly practical treatise on Photo-Micrography, which should include the latest advances in the science, has long been needed. The orthochromatic plate and the apochromatic objective have placed a new power in the hands of the photo-microscopist and made possible a class of work and a perfection of result formerly not easy of attainment. Mr. Pringle has set himself to supply this need, and on the whole he has done his work well. Of the twenty-six chapters, twelve are devoted to the practical discussion of the apparatus, methods and processes most serviceable to the intelligent worker. The remaining chapters discuss the photographic manipulations necessary to produce the negative and prints, seemingly a needless addition to the bulk and cost of the book in view of the numerous manuals which handle these matters in a thorough manner. Mr. Pringle writes from extensive personal knowledge of his subject, and as he is known to be a careful and painstaking worker his treatment of the subject should be authoritative. On the whole we think that the book well sustains its author's well-won reputation, and we are confident that it will prove a genuine help to all workers with the camera and microscope combined. The chapters on "Preparation for Work," "Optical Apparatus," "Illumination," "Photo-Micrographic Appartus," "Selection of Plates," "The Condenser and Bull's-Eye," "The Use of the Eye-Piece," abound in valuable information. We wish, however, that the American edition had contained some notice of the several efficient photo-micrographic apparatuses made by our own manufacturers. One of these we have used with great satisfaction for some time, and its merits entitle it to mention in a book like the present one. An additional chapter by an American editor dealing with such matters would have increased the value of the book for American readers. Mr. Pringle, of course, writing from the standpoint of an English experimenter, could not do this. It should be said that the book is written for the natural and medical sciences rather than for those who use the microscope as a pastime; but its helpfulness to the latter is not diminished by this method of treatment. Six collotype plates reproduce thirteen of the author's negatives for the most part satisfactorily.

The *Photographic Review* is not dead. It has simply changed owners and appears in a new dress.

Photographic Answers has added a department on "Photo-Etching and Collotype" under the editorship of Mr. W. T. Wilkinson, the well-known expert. It is a bright illustrated monthly edited by Mr. E. J. Wall of dictionary fame. Subscription, $1.00 per annum.

J. W. Fosdick, artist and author, contributes to *Outing* for April a fine article on the "Wheel and Camera in Normandy." As he spun over the white roads of northwestern France, reveling in the smooth, rapid motion with all the enthusiasm of a wheelman, his keen eyes caught many picturesque views which his faithful camera as well as his skillful hand made permanent for the future benefit and pleasure of the many readers of *Outing*.

TRAITE ENCYCLOPAEDIQUE DE PHOTOGRAPHIE; Paris, Gauthier Villars et Fils.

Dr. Fabre's exhaustive treatise is now in its second volume which is devoted to negative methods. The February number continues the subject of emulsion photography, and discusses development and later operations in a satisfactory manner. When completed the work will undoubtedly take rank as a photographic classic.

AN HISTORICAL AND PRACTICAL GUIDE TO ART ILLUSTRATION: By James Shirley Hodson; Sampson, Low & Co., London.

Those of our readers who are interested in modern methods of book illustration will thank us for calling their attention to Mr. Hodson's careful treatment of the subject. It is, we believe, the only work of its kind in the language, and it shows abundant signs of thoughtful and loving work. Nearly all of the more important methods of illustration are more or less fully described, and there are several valuable historical sections. The actual results of many of the processes are shown in the illustrations.

Recent additions to our Exchange List are the *Deutsche Photographen-Zeitung*, the organ of the Deutschen Photographen-Vereins and numerous other German societies, and the *Photographic Review*, an English weekly, containing much well-digested matter.

Our American exchanges continue the even tenor of their way, and are one and all welcome visitors to the Editorial Sanctum, not excepting a Western contemporary which displays a remarkable fondness for casting stones at us, notwithstanding that we have carefully refrained from criticising its own methods.

From W. Tylar, Birmingham, Eng., we have received a copy of *Tylar's Practical Hints and Photographic Calendar* for 1890, containing much practical information, and a price-list of Tylar's many ingenious photographic novelties. There are several charming illustrations.

Index to Current Photographic Literature.

Notes on Exhibition Matters; Photography, February 13th.

Development, Quick or Slow; Ibid.

The Probable Permanence of Plain Paper Prints; British Journal of Photography, February 7th.

On Control in the Density of Negatives; Ibid.

Development by Means of Vapor; Ibid, February 27th.

Silver Printing by Substitution; Ibid.

The Application of the Ramsden Eye-Piece to Photography; Photographic News, February 14th.

An Isoradial Eye-Piece; Ibid, February 21st.

Photo-Engraving by Electricity; Photographic Times, February 21st.

Photo-Zincography; Ibid, February 28th.

The Silver Printing Bath; American Journal of Photography, February.

Brice's Magazine Hand Camera; Scientific American, March 8th.

General Hints on Using Gelatine Plates for Lantern Slides; Photographic Answers, January.

Lantern Slides by the Carbon Process; Photographic Answers, January.

Lantern Slides by the Transferrotype Process; Photographic Answers, January.

Coloring Lantern Slides; Photographic Answers, January.

How to Make Lantern Slides from Larger Negatives; Photographic Answers, January.

Celluloid and Other Films; The Practical Photographer, March.

Intensification; Photographic Art Journal, March.

Photographic Exhibitions; Photography, March 6th.

Photography in Criminal Jurisprudence; American Journal of Photography, March.

Enlargements; American Journal of Photography, March.

Emulsions; American Journal of Photography, March.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

The Blair Camera Company, whose business announcement appears in the proper place, announce a monster new catalogue of their large line of cameras and other specialties. The new "Hawkeye" will surprise the amateurs this season.

From the Brooklyn Camera Company, another firm who know the value of our advertising columns, we have received a package of "Apollo Paper," which seems to be an emulsion paper for printing out. We found it not difficult to work and the results extremely pleasing. The printing may be stopped when the main outlines of the image are out, and the picture brought out by development.

Among the numerous aids to photo-micrography none are better adapted to their purpose than the three styles of photo-micrographic cameras made by Bausch & Lomb, who also manufacture a series of objectives for this special work. We have had experience with both, and can testify to their good qualities.

We ask our readers to notice the announcement made in this issue by the publishers of *Frank Leslie's Illustrated Weekly*. The liberal offer made to amateurs is one well worth trying to win, and we hope that the two hundred dollar camera may fall to one of our readers.

To amateurs living remote from the great centers of supply the services of a reliable photographic broker are a positive blessing, enabling him to make one order of what else might require half a dozen to as many different firms in order to supply his wants. Mr. C. M. Brockway, whose card appears in our advertising columns, undertakes photographic brokerage of every kind and endeavors to fill all orders entrusted to him promptly and carefully.

Those of our readers who are planning a trip abroad will do well to pay a visit to the extensive works of our advertisers, Messrs. Perken, Son & Rayment, while in London. In addition to their excellent line of Optimus lenses the firm make a large variety of other photographic supplies, all of which are favorably known in England.

◆ ◆ ◆

United States Photographic Patents

Issued in February and March, 1890.

FEBRUARY 25th.

421,923—Photographic camera; H. N. B. Good, Devizes, County of Wilts, England.
422,143—Photo-negative bath; J. R. Moeller, Grand Island, Nebraska.

MARCH 4th.

422,559—Photographic stand; H. Wild, Zurich, Switzerland.
422,644—Photographic shutter; J. R. Trego, San Francisco, Cal.
422,686—Camera; H. M. Altick, Dayton, Ohio.
422,709—Photographic camera; W. A. Brice, London, England.
422,825—Photographic camera shutter; E. W. Perry, Jr., New York, N. Y.

MARCH 11th.

422,984—Photographic camera; A. W. Simon, Akron, N. Y.
423,059—Packing box for photographic dry plates; E. Lear, Chicago, Ill.

MARCH 18th.

423,473—Timing apparatus for photographers; H. Ford, Lyndon, Kansas.
423,551—Camera stand; E. C. Fisher, Claremont, N. H.
423,649—Magazine for photographic cameras; T. S. Wiles, Albany, N. Y.
413,682—Camera; H. W. Hales, Ridgewood, N. J.
423,849—Photo-chemical printing; W. Willis, Bromley, England.

MARCH 25th.

423,913—Photographic camera shutter; J. J. Dossert, New York.
424,146—Photographic camera; D. J. Tapley, Newtown, N. Y.
424,315—Photographic apparatus; E. Kipper, Adams, Mass., and E. W. Perry, Jr., New York, N. Y.
424,396—Magazine photographic plate-holder; T. S. Wiles, Albany, N. Y.
424,402—Camera; W. H. Bristol, Hoboken, N. J.

◆

List of Dark-Rooms Open to the Use of Amateurs.

Luray Inn—*Luray, Virginia.*
Prospect House—*Blue Mountain Lake, Hamilton Co., New York.*
High Falls House—*Dingman's Ferry, Penn.*
The Stanley House—*Lake Joseph, Muskoka, Ont.*
Cascade Lake House—*Adirondacks, N. Y.*
Hotel Coronado—*San Diego, California.*
The Raymond—*East Pasadena, California.*
San Marco—*Santa Barbara, California.*
Del Monte—*Monterey, California.*
Spencer House—*Niagara Falls, New York.*
Slide Mountain House—*Big Indian Catskill Mountains, New York.*
Fort William Henry Hotel—*Lake George, New York.*
Profile House—*White Mountains, New Hampshire.*
The Westport Inn—*Westport, New York.*
Breeze Lawn—*Hunter, New York.*
Lake View House—*Bolton, Lake George, New York.*
Mountain Park Hotel—*Hot Springs, North Carolina.*
The Clermont House—*Southwest Harbor, Mt. Desert, Maine.*
Cole's Hotel—*Kidder's Ferry, Cayuga Lake, New York.*
The Chiswick Inn—*Littleton, New Hampshire.*
Sam. C. Partridge—*San Francisco,* 529 *Commercial Street.*
The Chicago Camera Club—*Chicago,* 182 *Wabash Avenue.*
Gayton A. Douglass & Co.—*Chicago,* 185 *Wabash Avenue.*
The Blair Camera Co.—*Chicago,* 208 *State Street.*
W. H. Walmsley, Ltd.—*Philadelphia,* 1022 *Walnut Street.*
R. H. Moran—*New York,* 396 *Broome Street.*
Loeber Bros.—*New York,* 111 *Nassau Street.*
Barker & Starbird—*Boston,* 56 *Bromfield Street.*
Arehwraod Springs Hotel—*San Bernardino Co., Cal.*
W. C. Russell—*Baltimore, Md., North Charles Street.*
Allen Bros.—*No.* 14 *East Larned Street, Detroit, Mich.*

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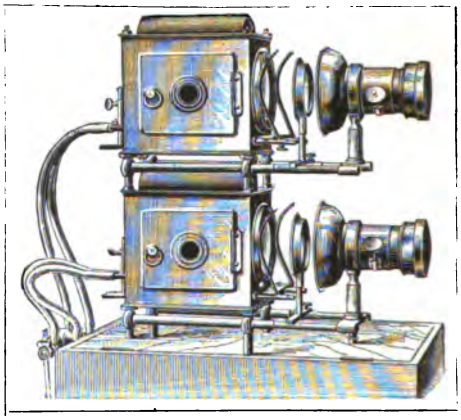

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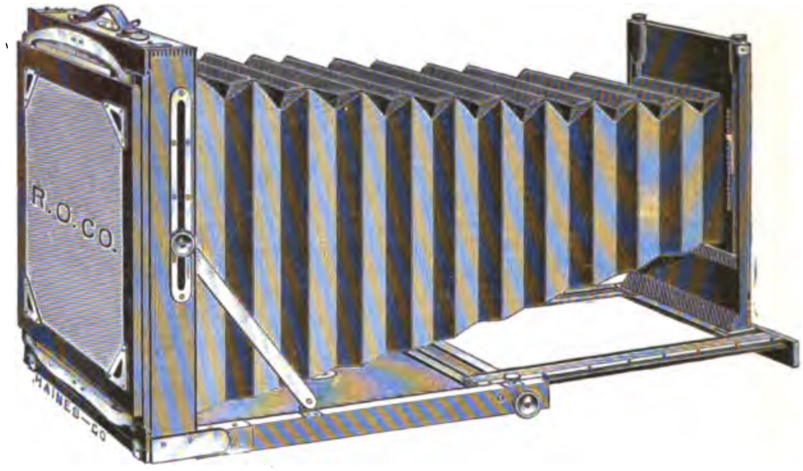

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FROM A NEGATIVE BY FRANK M. SUTCLIFFE.

UNDER THE CAPSTAN.

THE AMERICAN
AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., MAY, 1890. No. 5.

Our Illustration.

IN presenting one example from the many which Mr. Frank M. Sutcliffe, of Whitby, England, exhibited at the Philadelphia Exhibition last year, we are pleased to note the natural posing and grouping that is so agreeable in "Under the Capstan," as well also the softness and crispness that appears to pervade all of his work.

The group is arranged on a wharf, the girls attract the eye as the chief object of interest, then appears naturally to the view the figure of a man looking off in the distance, which gradually leads the eye out of the picture; a very happy combination. At our request Mr. Satcliffe tells how he came to make the picture, in these words: "I had seen the girls there the night before. I took it just as it was getting dark, about half past seven, one summer's evening. I made the girls promise to go there again with their 'work' as soon as they left work the next day. When they came and I arranged the camera, a crowd of boys soon gathered around and seemed likely to spoil the picture by making remarks and throwing shells and dirt at the sitters. The boys were all got rid of by setting them off for a race, for a penny, to the other end of the pier and back." Mr. Sutcliffe looked over the ground in advance before taking the picture, and resorted to simple but effective means to secure quiet when he was ready to proceed. Both of these suggestions are practical, and should be heeded by all sincere amateurs. He has the rare faculty of producing artistic photographs which are also technically faultless. He was one of the diploma takers at the exhibition. The plate was produced by the Moss Engraving Company.

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A Trip to the Windward Islands, the Spanish Main, and West Indies.

By George Bullock.

[Continued from Page 125 of Number 4.]

RAP! Rap! Rap!

"Is that you, steward? Come in. I'll take the coffee right here. Have we reached Port Royal yet? What? Just coming to anchor off quarantine?"

Hurriedly slipping on the conventional early morning costume (permissible on deck before seven) I joined numerous of my fellow-passengers who had preceded me, and who were intently watching a small boat, containing the health officer, that was being swiftly rowed toward us. The mist of early morning was slowly dissolving in the rays of the rising sun, and our view of the surroundings gradually extending. Way off across the bay was Kingston, nestled at the foot of high mountains, whose tops were still hidden in the clouds.

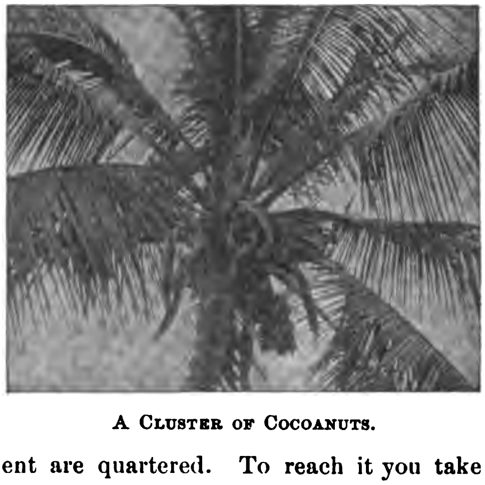
On leaving the "Moselle," at Kingston, we passed through the custom house without difficulty, were soon seated in a one-horse conveyance and driven through the narrow, badly paved streets to the Myrtle Bank Hotel. You are not liable to be favorably impressed with Kingston upon your first arrival. The buildings, mostly frame, are sadly lacking in architectural beauty, in fact are unattractive and not in the best condition possible. The streets are not kept very clean, and the sidewalks are very irregular, varying in height from one to four feet above the street, and frequently narrow. But Kingston has met with misfortune, having been partially destroyed by fire on four separate occasions. The last fire, December 11, 1882, destroyed about six hundred houses, the greater part of the business quarter. We noted here many of the same characteristics that had interested us at the other islands—the patient little burros trudging along with paniers filled with market stuff, the lithe and erect negro women carrying on their turbaned heads baskets filled with rich tropical fruit, and not the most excellent of hotel accommodations.

Jamaica (called, from the Indian Xaymaca, "The Land of Streams"), after its discovery by Columbus, remained in the hands of the Spanish till the year 1655, when it was captured by the English, and at one time was the most important English colony. The island lies 90 miles south of Cuba, and is 144 miles long and 49 miles wide in its greatest extent. The celebrated Blue Mountains (having an elevation of 7,360 feet) form the eastern part of a range that crosses the island, overshadow Kingston, and furnishes a picturesque background to the city. Up in the gorges of these mountains rise numerous streams that flow down across the plain, and give to Jamaica that abundance of water that keeps the country looking so fresh, green, and luxuriant. It is through one of these gorges that the Rio Cobre flows, and a roadway, running for three or four miles alongside of the river, is called the Bog Walk. One of our excursions was to this beautiful valley. Taking the railway that runs to Ewarton, we left the train at Bog Walk Station, then by carriages through the gorge, with the wild tropical foliage overhead, rocks and water at our feet, glimpses of the blue sky through the tops of the palm trees. It was indeed a charming drive back to Spanish Town, where we boarded the train returning to Kingston.

THE BOG WALK.

The present population of Jamaica is about 580,000; of these perhaps 15,000 are white, about 10,000 or 12,000 coolies, and the remainder negroes. Thirteen seaports furnish harbors where ships may load up with sugar, rum, coffee, cinchona, and fruits, which are the principal exports.

Sugar is the main product of the country, and most of the resulting molasses is distilled into the celebrated Jamaica rum. From the north side of the island great quantities of bananas are shipped to the United States. Along the coast line cocoanut palms seem to flourish, and the fertile plain, sloping gradually upward till it reaches the base of the mountains, is covered with vivid green patches of sugar cane. Then about the base of the mountains are found banana plantations and coffee groves.



A CLUSTER OF COCOANUTS.

At a distance of fourteen miles from Kingston, up the side of the mountains at an elevation of 4000 feet, lies the cantonment of Newcastle, where the white troops of the West Indian regiment are quartered. To reach it you take a carriage ride for nine miles to Gordontown, and then five miles on horseback up the valley of the Hope river. The black troops of the same regiment, a striking body of men, wearing the brilliant Zouave uniform, are quartered just outside of the town.

Our stay in Kingston was necessarily, much to our regret, very brief. It was our desire to go from Jamaica to Cuba, but we learned upon our arrival at Kingston that there was no steam connection whatever with Cuba. We then endeavored to charter a sailing vessel, telegraphing to several of the other seaports, but without success. We had almost given up all hope of reaching Cuba, when we found a Canadian schooner that had just unloaded a cargo of salt fish, and was about to take on board a cargo of sugar and molasses. Upon interviewing the captain, we succeeded in persuading him to charter us the vessel, carry us to Cienfuegos, and get his cargo there.

We were up at daylight on the morning of our departure from Kingston, buying ice, poultry, meats, vegetables, quantities of fruit, apolinaris, soda, and other liquids—enough for a ten-days' cruise, for we were uncertain as to how long a voyage the four-hundred mile cruise to Cienfuegos would be, and we desired to be on the safe side. Numerous other articles, pillows, rugs, (the Fred E. Cox, our 85 foot schooner, only had one bed), crockery, table ware, linen, etc., were required, in obtaining all of which we were kindly aided by a citizen of Jamaica, who not only manufactured ice, sugar, distilled rum, but owned a grocery and drug store, and also managed a dry goods establishment. The American Consul also assisted us in obtaining the necessary papers, and having our passports indorsed by the Spanish Consul.

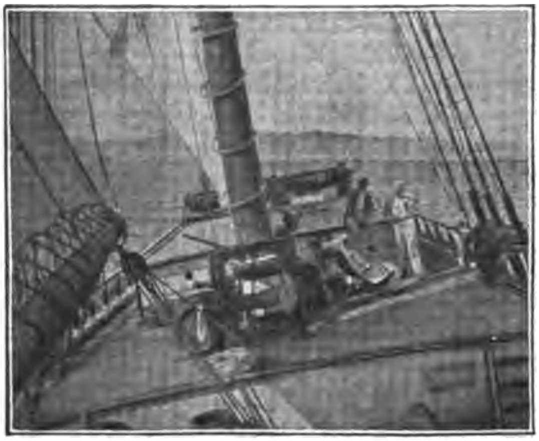
At last passengers, supplies, and the pilot were aboard, we were ready to get under way. (In reading about Jamaica in a guide-book, I was informed that "the sea-breeze blows with *unvarying* regularity from the south-east, beginning at 10 A.M., and continues till about 4 P.M.") Well, it forgot to blow on this day, and we had the extreme pleasure of being slowly broiled by the hot tropical sun, as we paced the deck whistling for that longed-for breeze. It was then that we had an opportunity to admire the grand sweeping curve of Kingston Harbor, formed by a long arm of land projecting out from the shore and curving around to the westward, having on its extreme end the town of Port Royal. Early in the afternoon our patience was rewarded by a few gentle zephyrs that came stealing across the bay, and we were soon gliding slowly over the waters of this inland sea, toward the old town of Port Royal, the original capital of the island.

Many years ago, before the earthquake of 1692, it is reputed to have been the finest town in the West Indies, and at that time the headquarters of the roving buccaneers and the store-house for their rich plunder. Earthquakes, a hurricane, and two fires have sadly demoralized the old town. Soon after we had cleared the entrance to the harbor, the wind steadily increased until we had a whole sail breeze, and with the lee rail buried in the now foaming sea, every stitch of canvas set, we went merrily on our way.

This was delightful, and when dinner was served we went below in great spirits, but when in the cabin a most peculiar odor became very perceptible. Captain, what in the world is it?

"W'all, you know I took molasses up on my last trip, and came down with a cargo of salt pork and fish. I guess the bilge is getting stirred up a little."

"Well, I should say it was!" But fortunately we lived on deck, and only retired to the cabin at night (where, rolled up in our rugs, we rested on an old sail spread on the floor), and did not mind the salt pork and molasses combination.


ON BOARD OF THE SCHOONER.

The two days following we were favored with all the wind we wanted (one night more than we desired), so our voyage was a speedy one, and on the third day we had Cuba plainly in view, but although we made every effort, could not reach the entrance to Cienfuegos harbor before sunset. You are not permitted to enter a Cuban harbor after sunset. So the F. E. Cox was hove too for the night a few miles off the entrance to the harbor, we hoping that we might sail in early the next morning. Though so near to port, we found ourselves the next day drifting with the tide further and further away. The prospect of reaching port that night was about given up, when we noticed a ripple on the water between us and the shore, and we knew that a breeze was coming. It reached us just in time to allow us to enter through the narrow opening to the harbor, as the sun was making preparations to retire for the night in the west. When, after a five-mile sail across the bay, we dropped our anchor close to the docks of the town, we were visited by the medical and customs officers, who were somewhat surprised when our party of six and the crew lined up on deck for inspection. As soon as possible we landed on shore and gladly sought rest at the Hotel Union, Cienfuegos. This is the main sea-port on the south coast, and is connected with Havana by rail; the other notable sea-port on the south being Santiago de Cuba, which can only be reached by steamer.

Cuba is the largest and finest of the West India Islands, being nearly eight hundred miles long, although narrow,—named by some "The Queen of the Antilles." Havana, the capital, with a population of about 250,000, is the most important city in the West Indies. We made an early start in leaving Cienfuegos by train for Havana. It was necessary to make several changes of cars, and it is an all-day ride. The country passed through was flat and rather tame. Miles of sugar cane and rows of palm trees are the principal features of the landscape. Besides those cities already mentioned, two others, Cardenas, 100 miles east of Havana, and Matanzas, 85 miles east on the coast, are in a flourishing condition. It is at the latter that you leave the train, to visit the valley of the Yumuri, and the Caves of Bellamar. and if you do so, you will have an opportunity to ride in the national vehicle of Cuba, the *volänte*. It is a two-wheeled trap with very long shafts, built to carry two passengers. One horse is hitched between the shafts, another to an extra single-tree alongside, and ridden by the driver.

The railway terminates opposite Havana and you are ferried about a mile across the bay, which gives you an opportunity to admire the excellent landlocked harbor that is entered through a narrow channel, with the lighthouse, Morro Castle, and the heights of La Cabana on the left, and the fort of La Punta on the right. We found the hotels very good at Havana, the restaurants excellent, and the shop windows full of bright, attractive goods, such as silks, fans, etc.

STREET SCENE, HAVANA.

The architecture is far ahead of that of any other West Indian town, and the streets, although often narrow, are well paved. The Cubans are not without excellent theatres, and you buy your tickets for each act. So you try the first act, and if you do not like it you can go somewhere else. Bull fights and cock fighting are the principal Sunday amusements, and are usually quite well attended. Tobacco and sugar are the main exports of Cuba, and a visit to a cigar factory is one of the sights, if you are a smoker, you revel in; the best.of cigars at almost half the price you pay for them in the States.

One quite noticeable feature of life in Cuba is the interest in the Havana lottery. You are importuned at every step to buy a ticket,—men, women, and young children have them for sale. You are also startled by the Cuban money. It would seem that all the mutilated American silver coin was here in circulation, and it does not make any difference how many holes are punched in them. The Cuban paper money you can buy by the yard at the bank, a paper dollar being worth but forty cents in American silver, while American gold is at a premium, as it is also in Venezuela. In the English colonies that we visited, one is struck by the peculiar method there employed of keeping accounts, and the difficulty in the reckoning required. This arises from a custom (for which we were quite unable to find any good reason) of stating all prices and making all reckonings, even in the various branches of the colonial bank, in *dollars* and *cents*, while all the money is English, *£*, *S.*, *D.*, excepting certain paper bills, about the size of our own, of denominations ranging from $1.00 upwards; and these bills by the way are only good for their face value on the island where they are issued. So the traveler should always ask at the colonial bank for (English) gold and silver when obtaining money on his letter of credit, circular notes, or New York draft. (American silver is not acceptable, although American gold will be taken.)

PUBLIC SQUARE, HAVANA.

The great bother of using one kind of money, and stating all prices, making out all bills in another system of money (just as troublesome for the Englishman as the American) is best illustrated by an example. You are told at a shop that the price of an article you wish to purchase is $7.25. You thereupon, after much mental wear and tear, proceed to count out from your purse £1, 10s., 2d., and ha'penny (the pound being always reckoned at $4.80, the shilling at 24 cents, and the penny at 2 cents). The most desirable form in which a traveler can carry his money is in a letter of credit on London, being far the best in the English colonies, and in New York drafts which can usually be more advantageously used in the Spanish American countries. Thus provided, with perhaps a little American and English gold in one's purse for an emergency, and being always careful to get rid of the peculiar money of one country before entering another, we can travel through them all with little loss.

The climate of the West Indies is a mild one, and divided into two seasons, the dry season being from the middle of November until May, with bright, clear days, blue sky, and a temperature ranging from 76° to 80° Fah. Consequently one should provide themselves with light clothing, although it is not necessary to take very much with you, for you can obtain very good clothes at Barbadoes, Trinidad, and Jamaica, at very reasonable prices; also hats, shoes, and all other articles of wearing apparel which are brought directly from England. The ladies will find very good dressmakers and will especially enjoy shopping in Havana.

After an enjoyable visit at Havana we departed for Mexico, and in a future number I hope to relate our experience in that interesting country.

(To be continued.)

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Hand Cameras.

No. 2.

BY W. H. BURBANK.

THE P. D. Q. CAMERA.

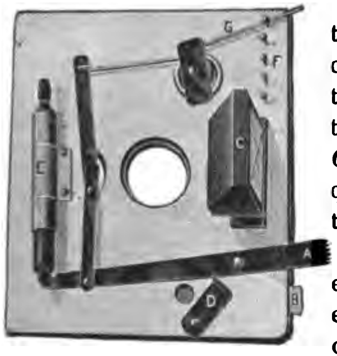
ANOTHER recent addition to the rapidly growing family of hand cameras is the P. D. Q. which the manufacturers, Messrs. E. & H. T. Anthony & Co., assure us means nothing more formidable than "Photography Done Quickly." It is designed for 4 x 5 plates or films, and its external dimensions are 11 x 7½ x 6 inches. Its weight is 4½ pounds. The box is neatly and substantially made, covered with black leather, and the outside metal trimmings are oxydized. Both the front and back of the box are readily removable when it is desired to use the camera on a tripod for long exposures. In this case it can be mounted either on the side or the bottom for horizontal or vertical pictures.

The shutter is an exceedingly simple one, consisting of a segment of a circle with an oblong opening revolving in front of the lens on a pivot at its apex. The actuating power is a spring coiled about the pin at the apex. Both ends of the spring engage on studs on opposite sides of the shutter, which can thus be set by turning the setting lever without opening the shutter. The release is by means of a push-button and lever. Provision is made for time exposures with the shutter, and the speed is regulated by the distance over which the setting lever is moved.

The focusing lever and scale are on the side of the box; the scale is graduated for distances ranging from five to three hundred feet. The lens is an achromatic single, fitted with a revolving diaphragm and gives good results in pure landscape work. The plate holders, which are of novel design, are inserted in place through the door on the side of the box. Separate holders are provided for films. The ground glass frame is not removed when the holder is inserted, the latter being slipped between the focusing frame and the back of the camera. The price is $20.00 with one plate or film holder.

THE T. & W.

Messrs. Tisdell & Whittelsey manufacture a hand camera of the higher grade which has several excellent features. In outward appearance the box differs little from the ordinary type, being a leather-covered box about 10x7x6 inches. None of the mechanical arrangements are visible on the outside of the box. Focusing is effected by turning a milled-head screw inside, and the exposure is made by means of a bulb held in the hand, or by pressing a concealed lever on the top of the camera. The lens is a Gundlach Rectilinear and its performance leaves little to be desired. Six plate or film holders pack snugly away inside, or a roll holder may be used. The shutter, shown in the cut, is of original design and works well.



To set the shutter the lever *A* is pushed towards the finder *C*. *B* is the release which connects with a push button concealed in the top of the camera. *D* is the time detent. For time exposures it is pushed down to its stop. *G* is the tension spring. Its action may be quickened by bringing its upper end nearer the finder. For ordinary work I have found the slowest to give the best results. For time exposures the spring is placed at the pin nearest the side of the box, the detent *D* is pushed down to its stop, and the tube of the bulb inserted in the small hole in the side of the camera. Sufficient pressure is then applied to the bulb to hold the shutter open. The shutter closes as soon as the pressure is removed. The box is well made and I have found it reliable in its working.

THE DOSSERT.

This camera is identical with the Ferret, which was described in my former paper.

THE HAWKEYE.

This was one of the most popular hand cameras of last season, and the improvements which have been added by the Blair Company will undoubtedly give it a large sale during the coming season.

As now manufactured the only piece of mechanism projecting beyond the neat leather-covered case is the focusing pinion head. The shutter is of the safety type and is set at any degree of speed by one turn of a revolving plate at the side of the box. The shutter has an attachment for time exposures. The finders, of which there are two, are of large size and good illumination. The focusing arrangement is exceedingly convenient. Either plates, films, or the roll-holder may be used as desired. The dimensions of the box are 7x7x12 inches, and it is furnished at prices ranging from $15 to $50, according to the finish and lens desired.

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As an all-round box equally well adapted for time or quick exposures with glass plates, cut films, or the roll-holder, the Hawkeye will be a leader during 1890. It is well made in every respect. The location of the working mechanism is convenient, as will be seen by referring to the cuts. Figure 1 is a representation of the box fitted with the roll-holder, showing the revolv-

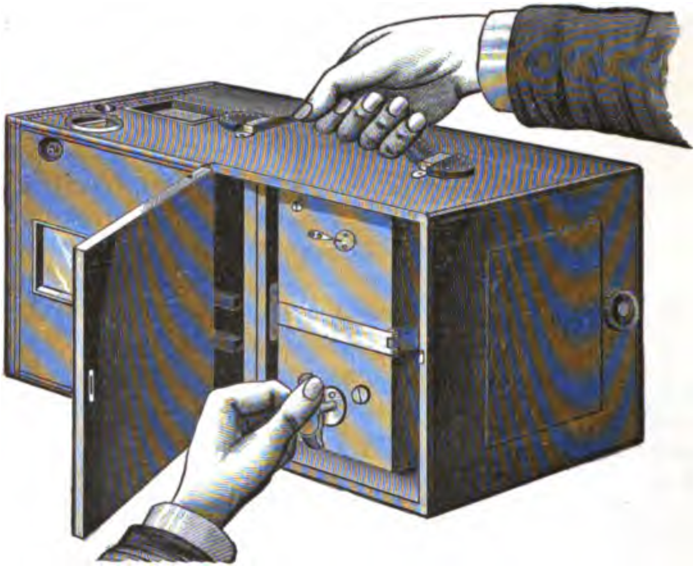

Fig. 1.

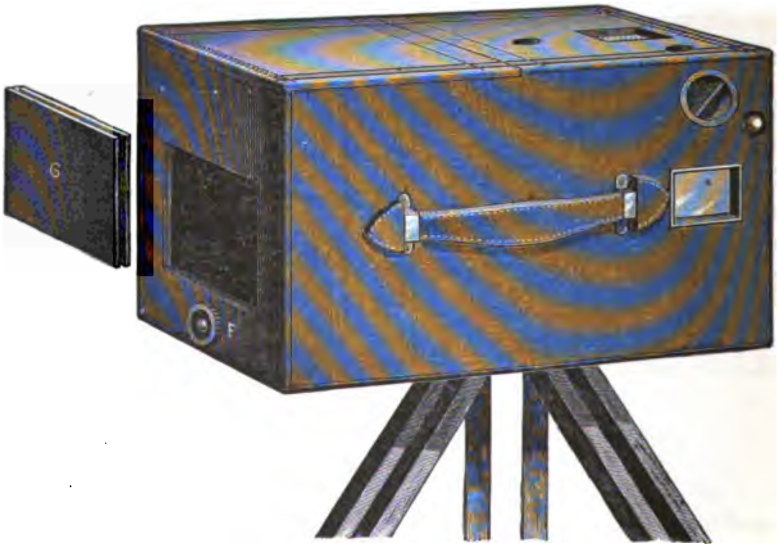

Fig. 2.

ing setting-plate for the shutter and the push-button release on the top, the numbered speed-indicator on the side and the head of the focusing pinion at the back. Figure 2 shows the camera mounted on a tripod for time exposures, with the sliding door removed for inspecting the image on the ground glass. My own trials of the Hawkeye have been uniformly satisfactory, but I would advise intending purchasers to order a good rectilinear lens substituted for the single landscape sent out with the cheaper grade. This, although an excellent single, is not so good in performance as a higher priced doublet, and it is true economy in purchasing a camera of any kind to invest in a good lens. In shutter work this is extremely important in order to secure good definition and brilliant illumination.

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The Silver Printing Bath.

BY CHARLES L. MITCHELL, M.D.

[Read before the Photographic Society of Philadelphia.]

IN the sensitizing of paper for the purposes of photographic printing the exciting or sensitizing bath is one of the most important features of the process, hence a few notes concerning its preparation and preservation may not be out of place.

The usual method of making paper of any kind sensitive to the action of light is, after having previously impregnated it (or "salted" it, as it is termed) with an alkaline chloride, to float it for a varying length of time on a solution of silver nitrate. This solution is called the silver "bath," and consists of silver nitrate dissolved in water, with or without the addition of other substances, the strength of the solution varying from 35 to 60 or 70 grains of the nitrate to the ounce. The precise strength necessary to produce the best results depends upon the amount of chloride used in salting the paper, but for the several brands of paper now found in the market, both plain and albuminized, a strength of 50 grains of silver nitrate to the fluid ounce of water will be found to be a safe average.

Silver baths may be divided according to their composition into three classes.

The first class comprises such formulæ as direct the use of only the silver nitrate and water. A bath made according to this plan, and containing from 50 to 60 grains of silver nitrate to the ounce, is used at the present time by a large number of professional photographers, and is capable of producing excellent results. It is not apt to discolor with use, and by occasional purification, as afterwards to be described, will last for a long time. It should be kept slightly alkaline in reaction, as the presence of free acid would be apt to act injuriously on the paper. This can be done by the occasional addition of a few drops of ammonia, or, still better, of a small quantity of a strong

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solution of sodic carbonate. The resulting precipitate of silver carbonate soon settles to the bottom of the vessel, and tends to keep the bath clear by carrying down with it any floating organic matter.

The second class is represented by the old ammonio-nitrate bath. This was formerly in great favor among photographers, and, although to a large extent superseded, still has some great advantages, particularly when used in the preparation of silver prints on plain paper. It is prepared as follows: The silver nitrate is first dissolved in the proper quantity of water; two-thirds of this solution is then placed in a separate vessel, and strong ammonia added drop by drop, until the precipitate of oxide of silver at first formed is completely dissolved; the remaining third of the solution is now added, and as this causes a slight precipitate again, pure concentrated nitric acid is added cautiously, drop by drop, until this precipitate is just re-dissolved. Although increasing the sensitiveness of the paper and deepening the intensity of the prints, this bath is apt to more easily discolor with use than the previous bath, owing to the separation of free organic matter and albumen from the paper. For prints on plain paper, however, it is particularly adapted, and will give results not equaled by any other method, the prints having a rich velvety appearance. Paper sensitized on this bath does not need to be fumed.

The third class comprises baths which, in addition to the silver nitrate, contain also an alkaline nitrate, such as the ammonium, sodium, or potassium salts. These salts act as absorbents of free chlorine, and also serve to prevent the paper from becoming excessively dry in hot weather. The following formula may serve as a type.

Silver nitrate,	60 grains.
Ammonium or sodium nitrate,	60 grains.
Water,	1 ounce.

Render slightly alkaline with carbonate soda, or with ammonia. A few grains alum are also sometimes added for the purpose of preventing blisters. This bath gives excellent results with albumen paper, and for this purpose is probably to be preferred to either of the preceding formulæ. For plain silver prints it is much inferior to the ammonio-nitrate bath, and the prints seem to lose considerable strength during the preliminary washings before toning. Paper sensitized in this bath also requires to be fumed before printing.

In sensitizing albumen paper in these different baths, the paper should always be "floated," as it is termed, an operation sufficiently familiar to all photographers to require no description. Plain paper may be either "floated" or the paper may be laid flat on a clean sheet of glass, and the sensitizing solution applied to the *salted* side by means of a clean swab of cotton flannel, or a camel's hair brush. It may be remarked here that paper sensitized in either a bath of the first or the third class should always be fumed; with those of the second class it is not necessary. In printing, also, the sensitized paper from the former must be printed much more deeply, as they seem to lose a great deal of intensity in the subsequent washings. In the preparation of plain silver prints with the ammonio-nitrate bath, the writer has found such a small percentage of silver in the wash waters that but a slight reaction would be given to the ordinary tests of silver, thus showing that nearly all of the silver salt remained fixed in the paper, and consequently tended to deepen and intensify the print.

Having now briefly discussed the different forms of the silver sensitizing bath, it remains to say a few words regarding its care and preparation. First, as every sheet of paper sensitized robs the bath of so much silver, its loss must be made good, or in a short time the bath will cease to work properly. The bath must therefore be strengthened from time to time, and this is generally done after each day's work by adding an amount of fresh nitrate of silver corresponding to the quantity abstracted from the bath, thus maintaining it of a uniform strength. The usual practice is to allow about fifty grains of silver nitrate for each sheet of paper sensitized, and if the amount of silver corresponding to the number of sheets used is dissolved in a few drams of water and added to the bath, and then the bath exposed to the light for a while, it will continue to work satisfactorily for a long time. The hydrometer is also used for determining the strength of the bath, it sinking to certain marks corresponding to the number of grains of silver nitrate in each ounce of the solution. This answers very well for a solution of silver nitrate in pure water, but as the bath soon becomes contaminated with soluble salts and organic matter, the density of the solution increases, and the readings of the hydrometer in consequence soon become incorrect. The chief source of contamination to the bath is from organic impurities carried into it from the paper, in time causing a brownish or reddish discoloration of the solution. This must be removed, since paper floated on such a bath is unevenly sensitized and darkened. Several methods of purification have been proposed. One is to add a small quantity of kaolin to the bath, which is then well shaken up and allowed to stand in the sun. The organic matter is carried down by the kaolin as it subsides, and, after filtration, the bath is again ready for use. Another method is to add a small quantity of a strong solution of potassium permanganate to the discolored bath, and decompose the organic matter by its oxidizing properties. This is immediate in its action, and quite effective, but is open to the objection of introducing extraneous salts into the bath. Another plan is to add a few drops of hydrochloric acid, or still better a small pinch of salt, and the chloride of silver thus formed, in settling to the bottom of the vessel, carries all impurities with it. The best method, however, is to add a small quantity of a saturated solution of sodium carbonate, and then set the bottle containing the bath in strong sunlight. The action of the sunlight oxidizes the organic matter, and the carbonate of silver formed carries it down as it settles to the bottom of the bottle.

Should it, however, be found impossible to purify the bath by this means, the next resource is to the process of "boiling down," as it is termed. A porcelain capsule, or still better an enameled iron dish of convenient size. having been procured, the refractory bath is poured into it, and then placed over a gas stove and gently boiled down to dryness. The heat is then increased until the contents of the dish are in a state of fusion and completely liquefied. The heat is continued for a short time until all organic matter has been thoroughly carbonized, and then stopped, and the dish and its contents allowed to cool, the latter dissolved in distilled water and filtered. The filtrate is then made up to the original measure of the bath with distilled water, and a dram or two of fresh silver nitrate added to make up for waste and loss.

It happens, however, in course of time that the silver bath becomes so clogged up with soluble salts, such as the ammonium, sodium and potassium chloride and nitrate, resulting from the chemical reactions occurring during sensitizing, that the bath will no longer work. It must, therefore, be set aside, a new bath prepared, and the silver recovered from the old bath.

If the bath has been made according to the first or third class, all that needs to be done is to render the bath acid with nitric acid, and then add a strong solution of washing soda until the white precipitate of carbonate of silver ceases to be formed. This is allowed to settle, the supernatant liquid poured off, and the precipitate washed repeatedly until the washings are free from color, and all soluble salts have been removed. The precipitate is then drained on a filter, and the moist mass, filter and all, is placed in a dish of porcelain or enameled iron, and dilute nitric acid ($\frac{1}{10}$ of water) added until effervescence ceases, and the white precipitate is nearly entirely dissolved. This solution is then filtered and evaporated, first to dryness, and then heated to calm fusion, and allowed to cool. The resulting semi-crystalline mass may be considered a pure silver nitrate, and when weighed will indicate what amount of water is to be added to form a bath of the proper strength.

If the old silver bath, however, is prepared according to the ammonio-nitrate formula this method will not answer, as in the presence of the ammonia salt not all the carbonate silver can be precipitated. The best plan is, therefore, to acidify the bath as before with nitric acid, and then add salt until all the silver is precipitated as chloride. This should be well washed, collected on a filter and dried. It may then be converted into pure metallic silver by fusing it in a crucible with powdered charcoal and nitrate of potassium, or it may be placed in a vessel containing dilute sulphuric acid ($\frac{1}{20}$ or $\frac{1}{30}$ of water) and metallic zinc added. Metallic silver will be precipitated in a very finely divided state and the zinc dissolved. From this silver the nitrate can be prepared by dissolving it in dilute nitric acid and then proceeding in the same manner as described for the carbonate of silver.

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Photo-Micrography.

BY REV. F. T. HAZLEWOOD, D.D.

A VERY interesting object for the amateur to prepare for the microscope and to photograph is the gizzard of the cricket. Upon dissection this will easily be recognized as an egged-shaped body. By means of dissecting needles—two ordinary needles put into wooden handles—the outer muscular coating can be teazed off, and the hard chitinous interior laid open. It must then be washed thoroughly in alcohol, then transferred to carmine stain, or eosin stain. For an object like this, where differentiation of tissues is not sought, but a sufficient coloring of the thinner and transparent parts to cast a shadow strong enough on the sensitized plate to photograph, the eosin stain, or any red aniline dye will answer all purposes. Having stained the object, wash again in alcohol, then place in a water solution of carbolic acid until it is transparent. The next thing to do is to mount it in Canada balsam. This is not difficult, but it must be done with care, so that the gizzard will be laid out flat. Having put a suitable cover glass over it, it is customary to hold it down with a spring clip. In the absence of this, a lead shot or minnie ball may be placed on it, and left until the balsam becomes hardened. Care must, however, be taken not to get the balsam on the top of the cover glass.

When the balsam has become hardened sufficiently, place the object on the stage of the microscope, and look it over, so as to get a good idea of its condition, the amount of light necessary properly to illumine it, etc. It is a good plan in photo-micrography, as well as in general photography, to study well the situation beforehand, so as to know just what you may reasonably expect to do. Having satisfied yourself on this point, proceed to photograph in the manner described in a preceding number of this journal. It is always wise to use the make of plates with which one is familiar; but the plates which we have found, after using many kinds, to give the best results are made by John Carbutt, those in particular made especially for lantern transparencies. Properly exposing and developing our plate, we get a negative from which we make a print.

The gizzard is found to be composed of six segments. Each segment contains three rows of teeth. Bunches of hairs are placed at intervals among the teeth. Above the segments with their teeth are seen six rows of bristles, and below the segments two little ducts leading from each of them, the purpose of which will be described presently.

We have here, then, what might be called a miniature cider mill and press. The food of the cricket, grasses and weeds, passes into the gizzard. Then by the muscular contraction it is cut up by the teeth, or torn to pieces, ground up as apples in the cider mill; then by still further contraction it is pressed together. The bristles, of which we have spoken, prevent regurgitation. The juices thus expressed flow through the channels on either side of each segment to the bunches of hairs. Here, as in the straw of the cider press, the juice is strained. Thence it flows through the little ducts into the alimentary tract. Having made these photos, one can select out a single tooth, or a single bunch of hairs, or any other individual part and make an exposure of that.

It is a good plan to make an exposure of the whole object, and then with higher powers make a series of the individual parts.

Another very interesting object for photo-micrographic work is the tracheal system of insects. The larger and coarser trachea are fairly well seen in balsam mounts, but on account of their very great transparency the smaller and finer branches are lost. For this reason, if they are to be seen even under the microscope they must be mounted with the air in them. This renders them more or less opaque. But to mount them with the air in them requires special methods. After many and varied experiments I succeeded in making a permanent mount on this wise: I dissect out the soft parts of the insect, and spread them out on a glass slide of the usual size, and let them dry perfectly; then with pencil brush give them a good coating of collodion, after which I melt a little hard, pure balsam, in a test tube and put it on the object with a cover glass applied at once. Care must be taken to have the balsam pure. I keep some balsam in a bottle with a cloth tied over the mouth to prevent the dirt from getting into it, and set it aside in a dry place, where all oil will evaporate from it. A little piece of this can be placed on the cover glass, held over the gas jet, melted and at once applied. The intestines, the brain, and the ganglia are very rich in the branching and minute distribution of the trachea. Incidentally it may be said that the intestine thus mounted makes one of the most beautiful objects for dark ground illumination. The brain shows the most abundant ramifications of the trachea, especially in the parallel branches in the rods of the eyes. The ganglia can be floated on a cover glass, dried and mounted in this way. The entire process is simple and easy, and gives the most satisfactory results. Having thus mounted the object, proceed to photograph it according to directions already given. There are many points of histological interest in the brain and ganglia which are thus made manifest, offering to the photo-micrographist a good field for original work.

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Dry-Plate Development.

BY ROBERT E. M. BAIN.

[Read before the St. Louis Camera Club at a meeting held March 18, 1890.]

THE special object of this paper being to instruct those members of the club who lack the experience of practical development, I have endeavored to make the explanation as simple as possible.

The amateur of the present day is entitled to more sympathy than he usually receives. When he brings his apparatus into the midst of the family circle, he is instantly expected to produce work equal to the best professional productions. No doubt he has read in the dealer's advertisement: "No skill required. Any child can make pictures equal to the finest professional work by buying one of our $2.50 outfits." Poor soul! he has no doubt believed all of this, and has promised countless cabinets and enlargements to his numerous friends. Now, the representative of this class of amateurs is really entitled to sympathy, as he has been deliberately mislead, and generally, through no fault of his own. Photography, like any other scientific pursuit, requires study and practice.

There is very little satisfaction in learning from the directions accompanying many of the cheap outfits, with which the market is flooded, that "pictures can only be taken with this camera in brightest sunlight." Sunlight is not to be had for the asking, and many of the finest effects are obtained when the sun has gracefully retired from the scene. As a preliminary bit of advice, let me say to the beginner, learn the use of the stops and test the relation of the stops accompanying your lens one with another. Learn to rely on the ground glass for information as to the proper time of exposure.

Supposing that a plate has been exposed the proper length of time, we will commence by mixing up the developing solution. This we will suppose to be a pyro formula. Let us take a graduate containing two ounces (2 oz.) water; to this we will add 32 grains carbonate soda crystals and 30 grains sulphite soda. When this has been dissolved, we will add 8 grains dry pyrogallic acid. In an empty bottle near at hand we will mix up a solution of carbonate of soda, 8 grains, to water 1 ounce, to be used in case the plate develops more density than detail. In another bottle, of a different shape however, we will mix a solution of bromide of sodium, 10 grains, water 1 ounce. This to be used if the plate develops faster than it becomes dense. Where the plate is suspected to be undertimed to any degree, it is well to have a vessel of hot water near at hand, as it materially quickens development when added to the solution. Laying the plate in the tray, we wash the solution across the face of it from the graduate. For the first few moments the developer should be carefully washed across the entire surface of the plate, that every portion may be wet at the same time, thus avoiding semi-transparent spots in the negative.

With the temperature of the developer at 60 degrees, the picture should begin to appear within thirty seconds. Should the plate commence darkening before fifteen seconds have elapsed, it should be treated for over-exposure, while if it does not appear to change at the end of forty-five seconds, some of the sal soda solution should be added. The plate, during development, should be kept from the direct rays of any light, except for occasional examination. If the temperature of the developer does not change, and no bromide solution has been added, the negative should develop in from five to twelve minutes. The addition of bromide to the solution increases the time of development to a considerable degree, and I have myself spent sometimes as much as one and a half or two hours developing one plate, which had been considerably over-exposed and which could not be duplicated. Again, under-exposed plates, when the fact of under-exposure has been demonstrated, may be laid in a very weak solution of sal soda and left an hour or two, with the result, frequently, of obtaining a good negative.

Remember in composing the developer, regardless of whose formula you may adopt, that the basis of the developer is the pyro, and that the addition of the carbonate potash, carbonate soda or ammonia, is to accelerate the development. The more of the latter used the faster the plate develops, but at the same time there is a limit to the addition of the alkali, if it is desired to have clear shadows in the negative. Too much soda will fog the plate. The object of the bromide is to retard development, permitting the portions developed, or high lights, to become proportionately dense, as the detail appears in the shadows or darker portions of the landscape. To sum up the matter, add pyro for density, soda for detail, and bromide for contrast.

To the beginner let me suggest the pyro and sal soda developer, all the ingredients to be used fresh, only sufficient developer being mixed to accommodate the work on hand. Always use a fresh solution for each plate, first, because it is stronger, and last, but not least, because you know the exact quantity and strength of each ingredient contained in it.

If you are really interested in negative making, always mix your own solutions, however well recommended some one else's ready mixed solution may be. Depend on your own brains for what you want and the exercise will do both yourself and the brains a world of good. I have brought with me a few plates, some of them correctly exposed or nearly so, and a few over-exposed and under-exposed, to show how they appear under development. I have prepared a developer of eikonogen in which I will also develop a plate, and shall be glad to give the formula for the solution to any of the members who may desire it.

The April Album of the Postal Photograph Club.

BY ALBERT LEBRETON.

THE April album of the Postal Photograph Club, which has just passed through my hands, contained a number of prints to which it was indeed a pleasure to revert. I cannot help directing my attention, at the very outset, to No. 3 (Bethlehem Hills), a lovely bromide by Mr. Prentiss of Holyoke, Mass. It is a poetical and dreamy bit, with just enough landscape and figures to make an interesting picture. In the distance are the hills; to the right of a road a hedge of trees, to the left two children, fortunately more interested in each other than in the camera. "Nothing particularly remarkable about that subject," you will say; but look at the picture and you will appreciate the difference between the *artistic* and the *ordinary* amateur. A dozen amateurs will take the same subject, and perhaps one or two will produce a *picture*, while the others will not. To elaborate on this now, and point out the whys and wherefores—why some pictures are artistic and others not, although technically perfect, would lead me beyond the scope of this article; and as there are some sixty or seventy prints in the album, I must "hold my horses." Mr. Prentiss also gives us No. 9 (Eagle Cliff), and No. 16 (Mount Tom). "A Sea-shore Group" (No. 1) by Mr. Jackson, is disappointing. The focus in the middle plane is poor, and in a picture of this kind it ought to have been at least fairly good. I think some rectilinear lenses, with an f—16 stop (the one he used), would have given better results. No. 12, by the same amateur (an outdoor study), is a more creditable piece of work; but I cannot help thinking of those lovely productions—"Refreshment in the Field," "A Gleam of Sunshine," and "A Lonely Shore," by the same author. Ah, well, "*Quandoque dormitat bonus Homerus!*"

Mr. W. H. Walmsley is our "king-pin" as regards bromides, and in addition to the pleasure he affords by his lovely pictures, "On Poquening Creek" (No. 2), "An Autumn Idyl" (No. 7), and "Ruins" (No. 10), he is so faithful and conscientious a critic that many valuable suggestions are always found in the Note-Book over his signature. As regards his prints in this album I decidedly incline to No. 7, an exquisite study in light and shade—and not too much of either. Mr. Graves exhibits three prints, "Quiet Waters" (No. 13), "Haying" (No. 15)—a good picture, even though a tree back of the wagon seems to be growing out of the hay in the wagon,—and "Camp Inglewood" (No. 64). Mr. Graves has heretofore given us only silver prints, and I must say they have always been well-nigh perfect. These bromides are not quite as good, but they well repay inspection.

Particularly interesting studies in this album are two pages of silver prints and two of bromides in most marked contrast to each other. The former, seven lovely little bits, by Messrs. Pulsford, Briggs, and Mueller (our efficient secretary), show that these gentlemen have not "gone forth under the open sky" in vain. They have brought us back the brightest bits imaginable, and well may we say, with their pictures before us:

> "O Nature, how fair is thy face,
> And how light is thy heart!" . . . .

Turning over the leaf, we come to five pale bromides. How cold they look next to the warm, sunshiny albumens! Not that they are inferior. Miss Emma Needles, Mr. Pulsford, and Mr. Demorest have certainly given us interesting pictures, that of Miss Needles (No. 57), "A February Drive," being particularly good. I don't know but that these pictures, after all, are more interesting from being placed in juxtaposition, as it were, to the silver prints.

Miss Clara J. Needles excels in flash-light pictures of children. I have never seen better ones. "The Dry Bath" (No. 58), a naked little tot, smiling at the evident absurdity of his position—in a tub without water—is decidedly better than No. 59, "A Safe Steed." Our young lady amateurs are quite up to our standard, let it be said. Miss Eva Clarkson gives us two excellent silver prints. "Finishing Touches" (No. 62) represents a young lady painting at an easel, the posing and composition being excellent. "Painting from Life" (No. 63) is the same interior, with more figures in it; indeed, I would suggest to Miss Clarkson that there are too many.

Miss Gillender has two artistic old studies, "Grist Mill in Tarrytown, A.D. 1689" (Nos. 44 and 60). No affidavits accompany the prints. Both are most meritorious, as is always the case with Miss Gillender's work. Indeed, I cannot refrain from saying that our lady members show the true characteristics of the artist in this particular, that their pictures evince a conscientious desire on their part to make apparent to others the beauty that has awakened their own admiration, and they are usually successful.

Mr. Fairbanks has in the album, "Rollstone Hills" (No. 8), a wintry piece of a dull brown tone (I should say the negative was under-exposed and under-developed), and "Marblehead Town and Harbor" (No. 17). Mr. Fairbanks is a painstaking amateur, whose aim seems to be *not* to take *pretty* pictures, but to take nature in its unattractive as well as attractive phases. "Choosing a Hat" (No. 21), a group of young people kneeling around their own hats, by Mr. Randall Spalding, I must confess, somewhat mystifies me. Miss Needles (there is always a good deal of humor about Miss Needles's criticisms) suggests the possibility of its being a "Jersey game which is played in a Cemetery," and sure enough that's where the young people seem to be. Technically there is no fault to be found with the picture. Mr. Spalding also gives us sectional views of the cruiser "Chicago" (Nos. 42 and 43).

The two platinum prints by Mr. Hansman, "Place and Dames" (No. 45) and "Glorious in Decay" (No. 46), are both worthy of more than a passing notice. It is unfortunate, however, that No. 45 was not more carefully handled in the printing, for the very pronounced shadows detract from what would otherwise be a perfect picture. The only other representative of the Washington contingent in the album is the writer, and a criticism of his prints will not be inflicted upon the gentle reader! But I shall ask you to indulge me a few moments longer while I bestow just measure of praise on those conscientious amateurs, Dr. Strout, Mr. J. M. Walmsley, and Dr. Mueller. "Our Guide" (No. 25) and "At Work" (No. 26), by the first named, are both excellent. The guide has just caught a magnificent fish, and nothing can be more natural than his pose. For that matter both pictures are excellent in composition and show good lens work,—think of it, too,—a Darlot single! There is no denying it, the Darlot lenses are safe. Mr. J. M. Walmsley, always painstaking, has in this number, "Our Camp Barber Shop" (No. 21) and "Vanquished" (No. 22). They furnish the comical element to the album, and like most of Mr. Walmsley's pictures, tell their own story. What member of the club will soon forget his "News from Home," in a recent album! Dr. Mueller's picture, "Gems of German Life" (No. 34), is truly a "gem." The two children are admirably grouped, and Vogel himself has not given us a more characteristic picture of children.

I wish more space were allowed me to speak of other interesting prints by Messrs. W. S. Chase (excellent surf studies), A. R. Frank (out of the way European views), Vernon L. Davey (two well finished bromides), and Edwin Netherwood's "Waterfalls in the White Mountains." But methinks I hear a voice on the coast of Maine crying, "Hold, enough!!!"

To enthusisasts in photography and amateurs desirous of improving in their art, let me say, in closing, Join the Postal Photograph Club!

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About Developers.

By F. C. Beach.

THE progress in developers within the past six or eight months has been one of the noticeable facts, which all who practice photography are interested in, since it has been in the direction of the simplification of the processes necessary in obtaining, easily, good negatives. That the excellent results obtained by us with the new eikonogen developer, and stated in this magazine several months ago, would certainly lead the prominent dry plate manufacturers to advocate it and adopt it, is now, as is usually the case, being carried out. It demonstrates the value of the amateur as an experimentalist. Whatever he finds by actual trial to be beneficial is usually adopted by the professional. In Mr. Cramer's latest formula of directions we find some excellent hints which we reproduce for the benefit of our readers. Under the head of preliminary precautions is stated the following:

Great care is necessary in the manipulation of very sensitive plates, to guard them against injury by traces of diffused light entering the lens, camera, tablet, or dark-room, or by using too strong a light while developing. A good light can be obtained by combining ruby glass with orange-color paper (known as Gold Bank Envelope), and its safety can be tested as follows: Cover one-half of a plate with opaque paper and hold it close to the light for about one minute. Develop, and if the unprotected part shows fog, screen the light with additional paper or fabric until it is perfectly safe. A screen should be provided, which will exclude all light from the plate during development. Never expose the plate, either in the developing solution or otherwise, to the dark-room light longer than is necessary to examine its progress from time to time. The lens should be examined by pointing the camera towards a strong light and observing if any reflections of light can be noticed, caused by the shining edges of the diaphragm or the inner walls of the tube, which would naturally cause fog. Rings cut out of black paper, placed near the lenses, will stop the reflection. The diaphragms should be blackened.

To test the camera and tablet, wrap a narrow strip of black paper around a plate in such a manner that only a part is protected; put the plate in the tablet and this in the camera. After placing the camera in strong light, pull the slide while the lens is kept covered and leave it so for about five minutes. If the camera and tablet are not light-tight, it will show developing the plate. Fog is often caused by light entering the slide or between tablet and back of camera.

Pyrogallic acid has been mostly in use and eikonogen has lately come to the front and gained much favor. From our own experience we can highly recommend eikonogen.

EIKONOGEN DEVELOPER—No. 1.

English Measures—Troy Weight.		Metric Weights and Measures.
40 ounces	Distilled water, *)	1000 c. c. m.
2 ounces	Sulphite of sodium crystals,	50 c. c. m.
1 ounce	Eikonogen, finely powdered,	25 grammes.

Keep the solution in a well stoppered bottle.

No. 2.

10 ounces	Water,	300 c. c. m.
1 ounce	Carbonate of potassium,	30 grammes.

No. 3.

10 ounces	Water,	300 c. c. m.
1 ounce	Bromide of potassium,	30 grammes.

*) Hydrometer test of sulphite solution (before adding eikonogen) 15.

For Use.

3 ounces	Solution No. 1,	120 c. c. m.
1 ounce	Solution No. 2,	40 c. c. m.
6 to 12 minims (or drops)	Solution No. 3,	½ to 1 c. c. m.

When the developer is quite new, it will be found necessary to add a little bromide solution (No. 3) in order to make it work perfectly clear. The addition of old developer will answer the same purpose. The developer can be used repeatedly by occasionally adding more of Solutions Nos. 1 and 2, omitting the bromide. It produces plenty of intensity by simply leaving the plate in it long enough. Any degree of softness can be obtained by diluting with more or less water, which is also recommended during hot weather and for under-exposures. Over-exposed plates are restrained by adding more of Solution No. 3.

Fixing Bath.

After developing and rinsing, the negatives may be fixed in a plain hypo bath, one part hyposulphite of soda to four parts of water, but the following formula is especially recommended:

English Measures—Troy Weight.		Metric Weights and Measures.
1 quart	Water,	1 liter.
4 ounces	Sulphite of sodium crystals,	120 grammes.
After being dissolved add		
½ ounce	Sulphuric acid,	15 c. c. m.
3 ounces	Chrome alum, powdered,	90 grammes.
Dissolve and pour this into a solution of		
2 pounds	Hyposulphite of soda,	1 kilo.
3 quarts	Water,	3 liter.

This bath combines the following advantages: It remains clear after frequent use; it does not discolor the negatives and forms no precipitate upon them. It also hardens the gelatine to such a degree that the negatives can be washed in warm water, provided they have been left in the bath a sufficient time. The plate should be allowed to remain in the bath five to ten minutes after the bromide of silver appears to have been dissolved. The permanency of the negative and freedom from stain, as well as the hardening of the film, depends upon this. Wooden boxes, with grooves to hold a number of plates, will be found both convenient and economical for fixing. When the bath becomes weakened by constant use, it should be replaced by a fresh solution.

In commenting on the above developer formula we should recommend that it only be used for plates that have had short exposures, and instead of adding No. 2 to No. 1 at first, simply immerse the plate in No. 1 only for a minute or two until the high lights begin to appear, and if it continues to develop too slow, then add one-quarter of the amount of No. 1 at a time, until sufficient detail is brought out. This process permits the eikonogen to work into the film to better advantage at first, and aids in building up the density, which is afterwards accelerated by the addition of the alkali, and avoids the need of adding the bromide solution. The suggestion of Mr. Cramer's as to the use of that solution is, however, practical. We have found the first negatives have not been as snappy, so to speak, unless the development is first begun with the simple eikonogen, or unless bromide is added.

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WOMAN'S WORK.

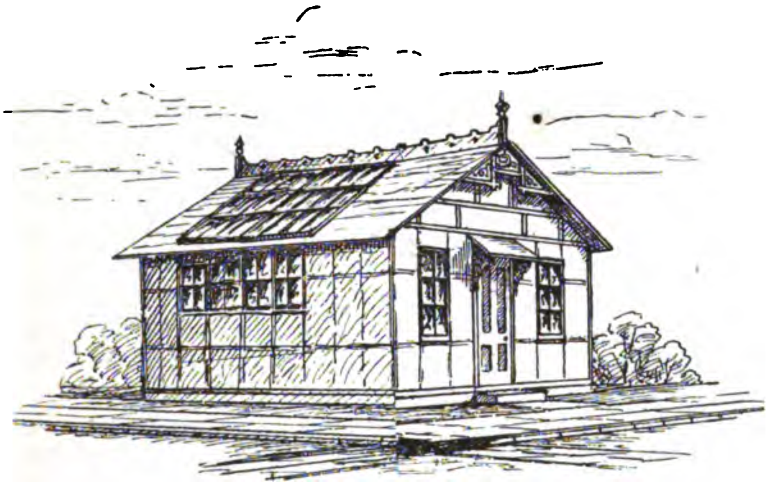
EDITED BY MISS CATHERINE WEED BARNES.

A Woman to Women.

I BELIEVE it is every woman's duty to help every other woman, whenever possible, out of the store-house of her actual, not theoretic, experience. She has it in her power now more than in all the past centuries to show what she can do, and where the fact is made patent that she can excel in a certain kind of work, she will not only have plenty of it to do, but it will find recognition. Justice has more friends than the world, generally, places to her credit. Good work is never wasted, even if no eyes but the doer's ever see it, for the next duty will be better done because of previous faithfulness. I wish I could impress this on all slipshod, careless workers, as also the other side of the proposition; that unfaithfulness in the smallest particular weakens one's power and inclination to do any really creditable work. Emphatically is this true in photography where, if anywhere, good work "pays." Failures come to the best of us sometimes, but one can largely reduce his or her percentage of them by placing mind, eye, and hand under the control of a well-developed conscience which will not permit any flattering unction being laid to the soul when not deserved. It is not conceit to take proper pride in one's work if it be good, for none can know as does one's own self what the work has cost. Then it is well to trace out on the printed page the various processes which have brought about the desired end, so that some unfortunate fellow-worker may thereby gain help and courage. Knowledge should not be kept as if in a mental safe-deposit company's vaults, but scattered abroad where he who runs may read. Many will pass it by, perhaps, others misuse it, but the greater part will, like the seed in scripture, fall on good ground and bear fruit an hundred fold. Therefore, to be consistent, I will put on record some words about my new summer studio for portrait work.

When I built my attic studio nearly two years ago it seemed as if hardly anything more could be expected by a non-professional. Constant and thoughtful practice, numerous failures and some successes have given me partial control of the situation, but a difficulty soon arose which has increased with every attempt to do more than usually ambitious work. The room is too small for any but the simplest portraits, and every trial to do more necessitates a world of trouble and what should properly be unnecessary trouble. The room, while quite comfortable in cold weather, thanks to my gas-stove, is just the reverse in summer, as the whole studio roof is of glass and the temperature at times becomes more fit for a sudarium than a studio. There are also three staircases to climb from the first floor, and this practically prevents certain interesting pictures being made, as the sitters are unequal to the effort.

Taking everything into consideration I decided to put a studio into the grounds about my home, and after making inquiries in various quarters as to the best way, finally ordered one from the Ducker Portable House Company, of New York, intending to take the building apart in winter, and pack it away until spring. These studios are made in several sizes and can be fitted together and put up in a few hours. Mine is sixteen feet eight inches by twenty-two feet eight inches, and the skylight is partly vertical and partly in the roof, which has a slope of about forty degrees. The inclined skylight is eight by eleven feet, and the vertical four feet six inches by eleven feet. It faces the north, with no shadows from trees or buildings. There is good ventilation from end to end of the room, a somewhat ornamental front, and inside, near the entrance, I shall place a small dark-room for convenience in changing plates. There will also be a small space curtained off as a dressing-room, with various toilet appliances. The skylight, as first planned, was much smaller than that chosen, and the added glass increased the expense slightly, but I believe in having plenty of light and curtaining it off, when necessary.



A PORTABLE PHOTOGRAPHIC STUDIO.

The building is of wood, comes in sections, and can readily be put in place by any good carpenter. There will be the same arrangement of shades and curtains as in my present room, and the heavy backgrounds can be managed much more easily in a room nearly twice the width of that now used. As ordered, the studio is to cost four hundred dollars, but in photography it is emphatically true that one expense leads to another, and what may be the eventual total I dare not estimate. I should have stated that the sections can be hinged together and are covered with material that will bear atmospheric changes, while the roof is fire and water proof, and the floor is several inches above the ground to avoid dampness. The backgrounds and other movable articles from my present studio will be transferred to the new one until cold weather. Being near the barn, gas and water can easily be supplied and the building heated, if necessary. These greater facilities for working lead me to anticipate great enjoyment in my new quarters, but I am grateful for all previous difficulties, as the experience gained thereby could never be found in books. Every exposure, every developed plate, every ounce of solution (whatever its nature) is a lesson to be carefully thought over and reasons for every failure ascertained.

It happens sometimes in making portraits that my hand is on the cap or bulb, my mind made up for, perhaps, four seconds exposure, when an almost imperceptible change in the light warns me to lessen or increase the time. This power of judging the strength of the light can only come from experience, sometimes expensive and generally unpleasant, as it involves failures. Chance may, occasionally, bring about a wonderful picture, but ask the operator who believes in "luck" to duplicate such an effect and see if he can do it, and how can a camerist ever acquire experience in judging the time for exposures if he does not develop his own negatives? This applies as well to women. Snap cameras to the uninitiated seem almost miraculous in their workings, while the skilled eye and hand needful to make a properly timed exposure is too often undervalued in comparison. But with advanced training one learns to take the keenest delight only in well-managed time exposures. Given all the genius and inspiration that ever filled a human brain, and in this curious blending of artistic power and exact scientific knowledge we call photography, it is too often nearly useless. However beautiful subject or pose may be, one soon finds out that pyro cannot be thrown recklessly into the developer without certain inevitable results, bromide is used by the drop, while the hydrometer and scales earn their place in every faithful worker's dark-room. The artistic or mechanical instinct will always show in one's finished work, and the first properly will rank highest, but in the best pictures each should supplement the other.

Women are, when interested in an occupation, conscientious and painstaking workers as a general thing, and neat ones, very useful qualities in the laboratory; but the first should not be allowed to miss the audacity of inspiration, and the last should not degenerate into the pettiness of unnecessary labor. Let your brains save your hands, do not be afraid of work but save your strength for where it will do you the most credit. Studio work is physically, as well as mentally, *hard* work, and the camera-stand and backgrounds should move smoothly and easily, while every appliance should be so arranged as to avoid over-exertion, for a tired woman like a tired man does poor work and the irritated nerves if pressed too far are apt to get the upper hand of one. When your fingers begin to work clumsily, when everything seems inclined to be at cross-purposes, and you are apt to drop whatever you take up, stop right where you are and rest until your mental horizon begins to brighten. Otherwise what is done under such a shadow will not advance your photographic reputation. Go at your studio work with freshly rested nerves, and do it always, if possible, in the morning. The results will be infinitely better than if you felt the necessity of constantly spurring up your exhausted energies to the working point.

I hope soon to give the readers of this magazine a few notes on how the summer studio fulfills its mission, and would be glad to hear of other women who are making similar experiments. There should be a community of interest among camera-workers, and each should contribute to the general stock of information. I should be glad of any items of interest on this subject, and will put them into shape for publication if it is deemed best to use them, trusting that women who find the camera a valuable aid to their appreciation of the world about them will put that fact on record, and endeavor to give additional interest and variety to the general fund of photographic literature.

THE

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EDITORIAL COMMENT.

Dr. P. H. Emerson, who has acted as our English correspondent, having accepted a position on the editorial staff of a new English photographic magazine, a position which will occupy his entire attention, is compelled to relinquish his work for this magazine. Our best wishes go with him to his new field of labor.

Mr. Thomas Bolas, long time editor of the *Photographic News*, will act as our English correspondent in the future. Mr. Bolas' perfect knowledge of photographic matters makes it unnecessary for us to make any extended comment on the quality of the work which he will do for the magazine.

Our old friend, Mr. John H. Thurston, formerly with the Blair Camera Company, and more recently with Benj. French & Co., has just opened a supply house for amateurs at No. 50 Bromfield Street, Boston. His long experience and practical knowledge of the needs of amateurs should win for Mr. Thurston a fair share of the amateur trade of Boston and vicinity.

Brittan's Salting Solution for Prints on Plain Paper.—Make a stock solution by dissolving chloride of sodium in ammonia to saturation. Dissolve four drams of camphor in eight ounces of alcohol. Add two drams of glycerine and four drams of the stock solution and make up the bulk to sixteen ounces with water. The solution is filtered and the paper floated or immersed for three minutes.

Toning Bath for Prints on Plain Paper.—Dissolve one dram of nitrate of silver in sixteen ounces of water and add forty grains of salt and stir well. When the precipitate has settled, decant the clear liquid and fill up the bottle with water. Stir well and allow the precipitate to settle. Again decant and then add to the precipitate sixteen ounces of water and two and one-half ounces of hypo. Stir till all is dissolved, and add in small quantities six grains of gold previously dissolved in one ounce of water. The tone varies according to the depth to which the printing is carried. For blacks the printing must be deep. After toning, the prints are fixed and washed as usual.

A Novel Printing Process.—Good results may be obtained by floating well sized paper on the following bath:

Chloride of iron, ...	5 grains.
Citric acid, ...	5 grains.
Water, ...	2 drams.

When dry the paper is exposed under a negative until a faint image is visible. The image is developed by floating the paper on a solution of gelatine to which India ink or other coloring matter has been added. The colored gelatine adheres only to those parts of the paper which have been acted upon by light, and a colored image is thus built up. When the image is sufficiently strong the paper is removed from the bath and well washed in cold water.

A New Iron Printing Process.—Dr. W. W. J. Nichols has recently taken out an English patent for a novel method of printing with salts of iron, to which he has given the name of "Kalotype." Having lately received the patent specifications, I have devoted considerable time to experimental work with the process. On the whole I find it quite satisfactory, giving brilliant prints of pleasing tones on mat paper. The only drawback is a tendency to yellowness in the whites, due to a deposit of iron. This may be generally avoided by over-printing and reducing the image in an acid bath which clears up the whites. The great advantages of the process are the disuse of the toning and fixing baths and the resulting rapidity with which finished prints may be turned out. Any of the ferric salts may be used as sensitizers, and the paper keeps fairly well if preserved from light and dampness. Good results are had with either of the following sensitizing solutions:

1—Citrate of iron and sodium, ...	96 grains.
Oxalate of potassium, ...	24 grains.
Water, ...	1 ounce.

2—Ferric oxalate,	24 grains.
Ferric tartrate,	24 grains.
Water,	1 ounce.
3—Citrate of iron and ammonium,	96 grains.
Oxalate of potassium,	24 grains.
Water,	1 ounce.

These solutions are best freshly mixed and the paper is coated in subdued light, care being taken to secure an even coating by any convenient means. I have usually brushed the solutions over the paper, but floating answers equally as well. The sensitized paper is exposed under a negative until a faint image, due to the formation of a ferrous salt, is visible. This image is then developed on the following bath for blue-black tones:

Water,	1 ounce.
Oxalate of potash,	96 grains.
Nitrate of silver,	7 grains.

A precipitate will be formed which is to be nearly redissolved by the addition of ammonia. The image flashes up at once and one or two seconds completes the development. The print is next immersed in the clearing solution. Dr. Nichols recommends the following: A twenty per cent. solution of citrate or tartrate of sodium, potassium amonium, made strongly alkaline by the addition of ammonia. Three or four chances of this are used, and when all yellowness has disappeared the print is washed in a few changes of water and then dried. I have found, however, that a greater purity in the whites is obtained by over-printing and reducing, and at the same time clearing the image in water made slightly acid by hydrochloric acid. For warmer black tones the following developer answers well:

Water,	1 ounce.
Oxalate of potassium,	48 grains.
Nitrate of silver,	7 grains.

For sepia tones:

Water,	1 ounce.
Borax,	35 grains.
Nitrate of silver,	7 grains.

For paper sensitized on either No. 2 or No. 3 solutions the following baths give the best results:

Water,	1 ounce.
Citrate of potassium,	72 grains.
Acetate of soda,	50 grains.
Nitrate of silver,	7 grains.

Or:

Citrate of potassium,	72 grains.
Nitrate of silver,	7 grains.
Water,	1 ounce.

In all these baths a precipitate is formed which must be nearly cleared up by the cautious addition of ammonia with constant stirring. The developing baths seem to be fairly constant. I have used the same solution for many prints without any seeming diminution in energy. Like the other iron printing processes, negatives of good density give the best results with this process, which does not take kindly to thin negatives. The printing is quite rapid, a short exposure to sunlight being sufficient to impress the image which may be detected by the change of color which takes place. Those who have worked the platinum process will have no difficulty in judging of the intensity of the printing. The manipulations are not difficult, the working expense is comparatively small, and I have obtained some very satisfactory prints by the method. Further experiment may possibly disclose some useful modifications.

Pizzeghelli's Platinum Printing Process.—So many inquiries have lately been made for the formulas and directions for working the cold bath platinum process that we give the following detailed description of the method. The process is not difficult and the results in skillful hands are all that can be desired. Plain Saxe or Rives paper answer well, and the following solutions are made up:

1—Gum arabic (pure),	70 grains.
Distilled water,	160 drops.
2—Ferric oxalate,	308 grains.
Oxalic acid,	8 grains.
Ammonium oxalate,	290 grains.
Distilled water,	27 drams.

The exact amount of ammonium or sodium oxalate to be added is determined by the formation of a brilliant emerald green color which becomes darker on the addition of more of the oxalates. As soon as the emerald green color is obtained the addition of the salt is to be stopped. These solutions are filtered and carefully kept from all actinic light which would reduce the ferric salt to the ferrous:

4—Sensitizer:	
Solution of chloro-platinite of potassium (1 to 6)	408 minims.
Solution No. 1,	391 minims.
Solution No. 2.	374 minims.
Or 5—Solution of chloro-platinite of potassium (1 to 6)	408 minims.
Solution No. 1,	391 minims.
Solution No. 3,	374 minims.
3—Ferric oxalate,	308 grains.
Oxalate acid,	8 grains.
Sodium oxalate,	250 grains.
Distilled water,	27 drams.

Stir well, filter through linen and keep from actinic light. No. 4 gives bluish-black; No. 5, brownish-black tones. About one and one-half drams are required to coat an 8 x 10 sheet of paper. This is poured in the middle of the sheet and equally distributed with a tuft of cotton, rubbing gently in all directions until an even coat is obtained. The paper is then hung up to get surface dry; it is then dried completely by gentle heat and kept in an air tight box containing a little dry chloride of calcium. The paper is exposed under the negative until the image is fully visible, when it is washed in three or four changes of water weakly acidified with hydrochloric acid. A slight washing in cold water completes the process. Another method is to print until the details are out with the half tones wanting and develop on a cold solution of carbonate of soda of the following strength:

Carbonate of soda,	38 grains.
Water,	27 drams.

Various modifications are admissible in the method of working. The paper may be slightly dampened by steaming before printing, and it may be immersed in warm water before the acid treatment with a view to secure more brilliant images. The successful working of the process depends on the purity of the chemicals. The chloro-platinate of potassium should not be acid, and it should be soluble in six times its weight of water. The ferric oxalate should show no trace of a blue color when ferricyanide of potassium is added, and it should give no precipitate when boiled. Fairly strong negatives gives the best prints, and with a reasonable amount of care there should be no great difficulty in working the process by following these directions.

We acknowledge the receipt of $1.00 from Mr. W. A. Trueman as his contribution of the Daguerre Fund. We would be pleased to receive many more from our readers. The idea is a good one and despite the hostile criticisms of some of our contemporaries we believe that the plan will succeed.

Our thanks are due to the Schuylkill and New Orleans Camera Clubs for invitations,—in the first case to attend the first public exhibition of the club, in the second to take part in the opening of the new rooms which the club has recently fitted up.

Woman's Work.—With this number we begin what we hope and believe will prove a valuable department of the magazine. With so enthusiastic and able a photographer as Miss Barnes in charge of it, "Woman's Work" cannot fail to prove entertaining and helpful. To the best of our knowledge we are the first to make this recognition of the position which our fair sisters have won for themselves in photography, and we are confident that the new department will prove helpful to all the readers of the magazine.

Pilgrim Hall, Worcester, was filled with boys, Monday evening, April 21st, to listen to a practical talk by J. C. Lyford on "Amateur Photography." He told the boys how a small boy, who is handy with tools, can make for himself a cheap camera which will answer every purpose. He then told them how to make plates, a thing seldom done by amateurs, to print negatives and to finish the print. The boys were much pleased with Mr. Lyford's remarks, and showed their appreciation in hearty applause.

During the winter an interesting series of lectures has been given under the auspices of the Dana Historical Society at Albany, N. Y. The series was brought to a close by a lecture on "Photography, delivered by Dr. S. C. Ward of the Albany Camera Club, which held the close attention of a large audience and was fully illustrated by a large collection of photographic apparatus. At the close of the lecture Mr. W. W. Byington exhibited a large number of slides embracing miscellaneous views contributed by Messrs. Mather, Palmer, Byington, Thacher, Patterson, Ball, Van Buren, Pease, Wiles, Ward, Van Allen & Morehouse, and members of the Rochester and Albany clubs.

Developer for Black and White Negatives.—At a recent meeting of the Photographic Society of Philadelphia, Mr. John Carbutt recommended the following developer for all cases where intense blacks and clear shadows are desired: Water, 60 ounces; carbonate of soda crystals, 2 ounces; sulphide of soda crystals, 4 ounces; bromide of soda or potash, 60 grains. To each ounce of the above, 2½ to 3 grains of dry pyro is added. By this means perfectly clear glass in the transparent parts of the negative, and very dense blacks can readily be obtained.

Toning Blue Prints.—Mr. Geo. H. Chase, Newport, R. I., kindly sends the following method of toning blue prints to a rich russet tone:

Saturated solution carbonate soda, ...	1 ounce.
Water, ...	1 ounce.

Then stir in as much dry tannin as the solution will dissolve without leaving a sediment. Then prepare the toning bath, consisting of one ounce of the above mixture to about four to six ounces of water. The prints should be well washed, as usual, then placed in the toning bath, and when the print reaches the desired shade it should be taken out and washed thoroughly. The color changes from blue to a violet shade, then merging off to a darker shade with a delicate rosy tint in the half tones, and if continued it will become a reddish brown. The stock solution should not be made up in a larger quantity than will be used the same day, as it does not keep well. Carbonate of potash may be substituted for carbonate of soda, giving a good effect with a slight difference in color.

Photographing Colors.—According to Dr. Eder, an unknown Transylvanian photographer, Herr Franz Veress, has succeeded in obtaining photographs in colors which are permanent. The photographs which have been submitted to Professor Eder are upon glass and paper and the prevailing colors are red, orange, and blue of different shades. Green is entirely absent. The glass or paper is coated with a collodio or gelatino chloride emulsion prepared in a peculiar manner, perhaps a modification of Carey Lea's method with the photo-chlorides of silver. The plate is placed in a copying frame and exposed to the rays from a transparent colored drawing. The negative image soon shows itself, and in the case of glass negatives the exposure is completed in two or three hours. Paper negatives require an exposure of several days. The negatives are fixed in an alkaline bath which makes the colors brighter. Herr Veress is at work on the problem of devising a means of shortening the time of exposure and he is said to have made some progress in this direction.

Owing to the proposed change of quarters by the New York Society of Amateur Photographers the Joint Annual Exhibition, which was to have been held in New York, has been postponed until the spring of 1891.

Mounting Lantern Slides.—Much attention has been given to this subject by Mr. William G. Reed of Boston, Mass., inventor of "The Boston Mat." As his directions are of a practical nature we take pleasure in re-printing them. He says:

> *There are several points pretty generally conceded, viz.*: All upright lines in the view, and straight sides of the mat should be perpendicular; and horizontal lines of view and mat, level, at the instant they become visible to an audience. The rocking motion on the screen when an after adjustment is necessary, does not add to the effect.
>
> *Absolute Register.*—Mercantile Slide Plates are labeled 3¼ x 4 inches. As a matter of fact they are seldom of exact size, and the variation often exceeds ⅛ of an inch or smaller, either way.
>
> In focusing for slide work, do not use the ordinary ground glass of your camera, but procure a piece of "mud-ground" glass; have it cut to exactly 3¼ x 4 inches, carefully trim a mat by the dotted lines, cut an opening by the outside lines of the diagram, and paste it to the smooth side of the focusing glass. Place it in the plate-holder (ground side towards the negative) in the exact position to be occupied by the sensitive plate, and then focus so that the edges of the opening, either top and bottom, or both sides, will just cut off the margin of the view. Be sure that the central object in the view, is exactly in the center of the opening.
>
> The view should always be perpendicular to the four-inch side.
>
> It would be found convenient to have several focusing glasses, matted with a variety of openings.
>
> In focusing, have the negative right side up. This will bring the picture on the screen upside down, just as the slide will be when in the lantern. Be very careful that any perpendicular lines, as of buildings, are at right angles to the side on which the plate rests, or that the horizon line is parallel.
>
> *Mounting.*—To have the label on the left: Trim first by the dotted lines under "The Boston Mat" and over "This mat copyrighted," etc. To have the label on the right: Trim first by the dotted lines on the other end and side.
>
> Place the slide upon the mat even with the left and upper edges, and trim the other end and side by the glass. Look through the slide and see by the little dashes on inside lines of diagram where the cuts for the opening are to be made; use a sharp penknife, or metal form and Robinson Trimmer, on glass or hard rubber.
>
> There is no question as to the neater appearance of a slide when bound with black paper; but I prefer the white because I can see it better when operating the lantern.
>
> *To Secure Best Results.*—First, study your negative or print, and decide upon what shape or style of opening you want for a slide; second, carefully prepare a mat that will suit the subject; third, focus so that the subject will fit the mat. By observing those three rules much subsequent labor may be saved, and some disagreeable effects on the screen avoided.

We differ with Mr. Reed in stating that it is necessary to have the negative right side up when focusing. It is much more convenient to invert the negative, which will bring the picture in its natural position on the focusing screen, and enable the operator to judge accurately whether the lines are straight.

In our June number we shall commence the publication of an "Index Review Photographic," by Dr. John H. Janeway, the well known amateur and writer. This will form one of the most valuable series of papers ever published in a photographic journal. It is, as its title implies, a complete review of photographic processes, methods, and substances, arranged in alphabetical order, and written by one who is a past-master in photography. We have carefully read the first installment of the manuscript, and can promise our readers a rare treat for their future reading.

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SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

The Society of Amateur Photographers of New York.—At the regular monthly exhibition of lantern slides held at the rooms of the society, 122 West Thirty-Sixth Street, on Friday evening, March 28th, the slides of the New Orleans Camera Club were shown, and those by members of the society. In the New Orleans Club's work were some excellent views of moss-covered oaks, dock scenes, sugar plantations, group studies, and negro subjects, all made by six members of the club and developed with hydroquinone. The work appeared to be of much better quality than that of last year. The pictures, shown afterwards, included a number of instantaneous views by Major Shorkley, Mr. Wm. M. Murray, Mr. E. Warrin, Mr. F. Vilmar, Mr. Wundrum, and others.

On Monday evening, March 31st, Mr. H. H. Bennett, of Kilbourne, Wisconsin, and an honorary member of the Chicago Lantern Slide Club, entertained the society by showing and explaining seventy slides of Wisconsin scenery and the "Dells of Wisconsin." He related many interesting stories of Western life, told how he exposed seventy wet plates before he secured one satisfactory negative of some young robins, and of the superstition the Indians had about the camera. Other views exhibited life on the Western river rafts and how they were managed. Altogether a very pleasant evening was spent. By request a few of Dr. E. C. Bolles's beautiful moss and cobweb slides were shown. A vote of thanks was accorded to Mr. Bennett, who in return cordially invited all amateurs to come and see him should they ever happen his way. The country near Kilbourne was full of beautiful and interesting subjects for the camera.

The sixth annual meeting of the society was held on Tuesday evening, April 8th, and was well attended, though the night was stormy. President Canfield, through want of time, had been unable to prepare a written report, but presented his views verbally. The society had held its own during the year, and had engaged new quarters in Thirty-First Street where it would soon move. No special improvement was noted in the library, though it was certain it needed it. He suggested that members contribute any old books they might not need. He thanked the members for the aid that had been given him during the past two years, and felt sure that the incoming president would have as much cause for returning thanks at the expiration of his term of office. The society was very united, and its members always aided the President in whatever he undertook in its behalf.

The Treasurer's report showed a prosperous condition of affairs. Receipts for the year were $4,430.19. Expenses, $3,382.12. Total balance on hand in both the special reserve fund and general fund, $941.92. The report was signed by Mr. C. C. Roumage as Treasurer *pro tem*, he having, at the request of the Board, succeeded Mr. J. E. Plimpton, who was obliged to relinquish the office a few days before the end of the year, for business reasons. The receipts were augmented during the year by $562, representing the proceeds from the Centennial Naval Parade and Exhibition at Chickering Hall, in February last.

The report of the Secretary, Mr. F. C. Beach, recited in detail the number of meetings and exhibitions held during the year. In his summary he stated that there had been seventeen lantern-slide exhibitions, covering two thousand different slides, one exhibition of photographs, twelve technical meetings, one special business meeting, two smoking concerts, and one general excursion. The number of cameras and other devices that had been shown were too numerous to mention. The membership comprised active, 130; subscribing, 12; corresponding, 49; honorary, 13; or 204 in all.

He suggested that the society undertake the photographing systematically of the prominent portions of the city, something in the nature of a photographic survey. The society is soon to begin the publication of its own proceedings, a step which he strongly favored. A number of donations had been received, among the most noteworthy was the presentation of a life-sized plaster cast of Daguerre, by the Photographic Society of France. A bronze medal had also been awarded the society at the Paris Exposition. The work of ladies in the society had been very helpful. The society was to be congratulated on beginning its seventh year under such auspicious circumstances as now appear. It has much work ahead to do which, if carried out, will prove beneficial not only to its own members but to others as well. An amendment to the constitution was passed creating the offices of Corresponding and Recording Secretaries. On a ballot duly cast the following new officers were declared elected: James H. Stebbins, Jr., President; Alfred L. Simpson, Vice-President; Corresponding Secretary, Frederick C. Beach; Recording Secretary, Thomas J. Burton; Treasurer, Camile C. Roumage; Directors, Frederick Vilmar, E. Warrin, R. L. Bracklow, L. B. Schram, Ferdinand Ruppert, H. N. Tilman, R. A. B. Dayton, J. V. Black. By the new amendment the Board of Directors is increased from twelve to thirteen. On the announcement of the vote, Mr. Canfield asked Mr. Schram to introduce the new President to the society, and conduct him to the chair. In accepting the office Mr. Stebbins thanked the society for the honor conferred, and asked the members to overlook any faults he might make as presiding officer, as his experience as such was somewhat limited. The annual report of the lantern-slide committee was read, also the report of the committee on joint exhibitions. The latter recommended the postponement of the joint exhibition until the spring of 1891, as a suitable gallery could not be secured until then. Mr. Burton remarked that the secretary's report was the best he had ever heard read by any officer of any organization, and that it furnished a good prospectus, since it clearly showed what had been done by the society during the past year.

As chairman of the committee on new quarters, Mr. Burton explained the plans drawn on the blackboard, for the ground and top floors, that had been agreed upon. He stated that the society was to pay a rental of $1,500 a year, but would save in other expenses which it now has to meet, so that the actual outlay would not exceed more than by $400 the present rental. By a vote of the meeting the plans of the new quarters were approved.

Prior to adjourning, an appropriation of $500 from the special fund was passed towards furnishing the new quarters, then Mr. A. P. Smith gave a successful demonstration of positive celluloid films, and on request declined to give his formula. Mr. A. E. Colgate set off on his hand a new flash-light powder of his invention, and exhibited photographs made by it. Mr. F. C. Beach showed a new shutter placed between the lenses adjacent to the diaphragm, very compact, and easily operated by a single flat spring.

Friday Evening, April 18th.—Dr. L. H. Landy gave an illustrated lecture before the society in the Chemical Lecture Room of the Columbia College School of Mines, on the "Arc Light for Projection." He exhibited a number of models showing the progress of the arc light from 1847 up to the present time, and ended by demonstrating the success of the Clark lamp with its automatic feed. It gave a remarkably steady light. The light was compared with the lime light, and exceeded it considerably in definition and color. Slides that were dull with lime light were brilliant with the electric. The point to be observed in the arc light for projection was to have the upper carbon placed somewhat ahead of the lower one. Dr. E. C. Bolles was especially pleased with the success of the lamp, having experimented some in the same direction. A cordial vote of thanks was accorded to Dr. Landy.

Friday Evening, April 25th.—The last exhibition of lantern slides at the old quarters took place, and included the work of the Louisville Camera Club and of members of the society.

THE NEW YORK CAMERA CLUB.—*First Exhibition of Photographs.*—On March 31st quite an extensive display of cameras was made at the rooms of the club, sent by various makers. On April 7th a lantern-slide exhibition, mostly the work of members, was held.

From April 14th to 19th inclusive the first exhibition of photographs ever given by the club occurred, and proved to be very successful and attracted quite a large attendance. It was open each day from 2 to 11 o'clock P.M. A very neat catalogue was gotten up, and was numbered to correspond with the pictures after they were hung, which was a great convenience, as one could begin at number one, both in the catalogue and the pictures as hung, and easily follow them. The plan, however, did not keep together each exhibitor's work. These were scattered around in different parts of the room according to the discretion of the committee. The chairman, Mr. Lindsay C. Ivory, under whose general direction the pictures were arranged, stated that he first located the large frames and then filled in the spaces between with smaller frames. The matter for the catalogue was first set up, and then the numbers were inserted to correspond with the frames. It required quick work on the part of the printers. One hundred and forty frames were hung. Owing to the limited wall space some small photographs had to be hung too high, but as a general rule excellent taste was displayed. In the center of the main hall was a beautiful palm-tree plant. The work of Mr. James L. Bruse was perhaps the best, as a whole, of any single exhibitor. He used large plates and displayed ability in portraits and landscapes, that was very decided. He had in all twenty-two pictures. Mr. David Williams, the President of the club, had the largest collection of any exhibitor. His six or eight views of "Storm Lift in the Alps" were admirable mountain and cloud studies. Of his series in one frame illustrating the "Castle of Chillon," the "View Over the Lake" was the best. His other pictures were flash-light groups and several views in France. One enlargement being a plain silver print from an enlarged negative, was too flat and contrasted strongly with the excellence of the other work. Mrs. David Williams also contributed a number of photographs, some of which were seen at the exhibition of the Society of Amateurs last fall. A picture of an "Old Peasant Woman," seated on a dilapidated wheel-barrow, was very good. Mr. W. T. Colbron had thirteen frames, mostly bromide enlargements, of views in Florida, that were of fair quality. No. 14, his single frame of seven prints from the same negative of seven kinds of paper, was quite interesting. The platinum print had the warmest tone. The print on the Obernetter paper was somewhat overprinted. Of the three frames sent by Mr. Samuel P. Huntington, his "Mount Æolus," at Dorset, Vt., was the best, though his enlargement, "Poor Pussy," was attractive, but not sharp.

Mr. Sydney Bishop had two frames; one, an interior showing a church altar decorated on Easter morning with flowers; the other, an enlarged group of some boys behind a barn trying cigar smoking. The interior was sharp and clear, but a trifle hard. The group was somewhat stiff, but presented an excellent suggestion for a picture. Of Dr. G. H. Fox's views, an enlargement from a ¼-plate negative on the canal at Ellenville, N. Y., was the best. In seven frames Mr. Howard Wainwright had several good views, made on American films, about Rye, N. Y., and a series of interiors that were excellently made. The work of Dr. Robert J. Devlin, the Treasurer of the club, was in general quite poor. His bromide enlargement of "Eospus Creek" was flat. His best views were in the Catskills, but these seemed to be under-exposed. The view called "A Level Stretch" was superior to the others in technical excellence.

In the eleven bromides and enlargements by the Secretary, Mr. H. T. Duffield, were recognized several views exhibited elsewhere last fall. His best was a winter scene in Central Park.

Mr. S. W. Bridgham had three frames. No. 28, studies from nature, especially of rocks and rapids, were the best. He had also a very fair picture of gathering hay. Mr. F. F. Cobb exhibited a frame of flash lights that were creditable. In the two frames sent by Mr.

William A. Fraser, were two platinotypes called "A Lonely Lane," and "Views at Hastings on the Hudson," which were excellently arranged and technically good. Mr. Ivory, the chairman of the exhibition committee, had two frames; one, of three pictures made of himself, by himself, by flash light, that were somewhat novel. The other frame contained six enlargements of hunting views in the woods of Maine; that of a canoe was very good. The work of nine ladies was distributed among the rest; some of it was very fine and some was poor. Mrs. Richard P. Lounsberry had two frames of portraits; one, a group of a boy and girl, was very soft and clear.

Mrs. Andrew Carnegie sent two frames of views in Scotland, and one frame of Kodak pictures. In one frame a view "Glenburne Falls, Cluny," was very soft and beautiful; another, "Luncheon on the Banks of the Tay," displayed excellent judgment in grouping. Miss. M. L. Ewen had two frames, both bromide enlargements; one, entitled "Ouda's Pets," which was somewhat hard, but the composition was fair; the other, called "A Lesson in Deportment," showing a dog sitting up with a paper in his mouth, was very good. In the three frames sent by Mrs. Jonathan Thorne, Jr., was one admirable marine view of surf, entitled, "A September Gale, Black Rock Harbor, Conn.;" another, an 8x10 portrait of an "Old Salt," was fair. Mrs. Henry W. Cannon had the largest exhibit of any single lady exhibitor (six frames in all) but her work indicated that she was somewhat of a novice, as the pictures were as a rule too hard, or the negatives were too thin. We saw none that were good enough to commend.

Mrs. Willard Parker sent three bromide enlargements. Most of them were uninteresting and too snowy; one, however, called "Before the Mast," was very naturally posed.

The best work by ladies was conceded to be that exhibited by Miss Mary E. Martin, in two frames, and especially her frame of "Portraits and Copy of Gerald Hayward's Miniatures." One in particular among these was a picture of an artist decorating a vase, the clearness and crispness and easy pose it possessed, all combined to make it a most interesting photograph. In nine views around Cooperstown, New York, was a very good photograph of geese. Miss Martin evidently knows how to skillfully manipulate the camera.

Mr. Franklin Harper had three frames; one, of interiors, was as usual up to his high standard; another, a group study of two little girls kissing each other, called "I Love Oo," was very cunning; and a third, holding views about "Lake Mohunk," were fair. Mr. A. T. Gillender had two frames of dog photographs that were fair. Of Mr. George P. Rowell's four New Hampshire photographs, those entitled "Christine Lake," and "The Percy Peaks," were much the best, showing, in one case, beautiful reflections.

In none of the five frames of Mr. F. G. Lloyd, was there any picture to be commended. Most were too thin, others were not in focus, and his general work indicated that he had had very little experience.

Mr. L. P. Atkinson contributed six frames, mostly of 11x14 bromide enlargements from ¼ plate negatives, that were fairly good. He also showed one carbon print and a transferrotype that were excellent. In the two frames, each containing a number of photographs sent by Dr. E. P. Fowler, was one picture, 6½x8½, called "Moonlight Scene," taken near Cooperstown, New York, that was especially good and very interesting. It was exposed on a Cramer 50-plate for five hours, and was taken from a building overlooking a general landscape. In the distance could be plainly seen a mountain. No data as to the size of stop or the lens used was given, but from the excellent detail and brilliancy it possessed, we suppose a stop equal to f-16 was employed. He had a portrait study of a standing figure that was fairly good.

In Mr. William J. Cassard's three frames were a number of hand-camera shots of hunting scenes and interiors; the latter were much the best—clear, sharp, and suggestive.

The three frames, sent by Mr. F. W. Stillman, contained only poor work, which indicated that he must be a beginner. Mr. Walter L. Pierce exhibited one interior of fair merit. Mr. C. Volney King's single bromide enlargement of a scene in Mexico was novel and interesting, though to our mind rather snowy. The beautiful pictures of Mr. Linzu Prescott, in two frames, one especially of Portland Harbor filled with small boats, were admirable examples of clear, crisp photographs. In his "Maine Landscapes" was a fine "Cattle and Road Scene." There were in all thirty-two exhibitors.

In general it may be said that this first exhibition of the Camera Club shows that a number of its members have the artistic side of photography better developed than the technical part, which promises well for future exhibitions.

It is to be presumed that a majority of the prints were not made by the exhibitors themselves, but by a professional printer, hence it is difficult to judge as to the quality of the exhibition except so far as all the facts concerning the production of each picture is given. The club has done an excellent thing for itself in getting up such a creditable exhibition, since it will have the effect of interesting many to practice such a fascinating art as photography has grown to be. The committee having the exhibition in charge were Lindsay C. Ivory, Chairman; Mrs. Jonathan Thorne, Jr., Miss Mary E. Martin, Franklin M. Stillman, J. E. Schermerhorn, S. W. Bridgham, B. Pomeroy. Its present officers are David Williams, President; H. T. Duffield, Secretary; Robert J. Develin, Treasurer.

ANNUAL EXHIBITION OF PHOTOGRAPHS—*By the Columbia College Society of Amateur Photographers.*—We were invited to attend this exhibition, held in the museum of the college, on April 17th and 18th, and were agreeably surprised to see so much excellent work. The students appear to acquire the practice of photography as readily as they do their other studies, and utilize it to good advantage in their summer vacation trips.

About two hundred prints, including a number of Kodaks, were shown by ten or twelve different exhibitors. The work was up to the usual average and very creditable.

Pacific Coast Amateur Photographer's Association.—The many interesting events promised to the members for the meeting of March 27th, brought out a large attendance. Professor Bolton, of the New York Society, addressed the association and exhibited his photographic outfit. By an ingenious use of the bayonet catch, three lenses are made to fit into one flange; to change from a long to a short focus lens is but the work of a moment, and to top this complete arrangement, a Neuman shutter is so fixed that it adapts itself to any of the several lenses. Answering the statement of the President that he was an old and enthusiastic photographer, Professor Bolton replied that, while he claimed to be enthusiastic he could not claim to be a veteran, having only within a short time taken up the study for the purpose of recording certain phenomena in the deserts of Arabia. Professor Bolton is now on his way to the Sandwich Islands. Upon his return the society hopes to have the pleasure of again listening to him.

An interesting and instructive paper was read by Dr. A. P. Whittell, in which he recommended the use of saturated solutions in place of the system of weights and measures in use at present. To support his suggestions he instanced the method now in vogue throughout the medical world for measuring solutions of cocanine, bi-chloride of mercury, etc. The doctor also exhibited a very compact camera of his own design. To economize space the lens, when not in use, is made to fold inward. The holder, which is only a couple of inches in width, holds twelve glass plates, or one hundred films. By the use of springs, similar to those used in a faro box (the doctor dryly remarked: "Of course none of you know the details of a faro box.") it is an easy matter to put a fresh plate to the front. A small changing bag is necessary to do this, but the ingenious construction of the holder makes the operation an easy and safe one.

A friendly letter was read from the President of the California Camera Club, an organization differing from the Pacific Coast Amateur Photographer's Association in that there is no restriction upon the members as to the disposition of their work. The Secretary was instructed to respond in the same spirit of good will, and to offer the rooms of the society for the next meeting of the Camera Club, or until they secured permanent quarters.

Resulting from the resolution adopted at the previous meeting, providing for the admittance of ladies to active membership, twelve names were balloted upon. It is pleasing to note that the vote cast was the largest ever polled in the history of the society, and it is unnecessary to state that their admittance was unanimously favored. This charge will put new life into the society, as the work of many of the lady amateurs equals the best of the most skillful of the sterner sex.

At the conclusion of the evening's entertainment, which included a large collection of lantern slides, some of them by Mr. Requa, who has just returned from a trip through Europe and Asia and part of Africa, the members sampled a large bowl containing a huge lump of ice and some slices of lemon. The solution looked like a pyro developer—but it was not. There could not have been a better medium for drinking the health of the newly elected President, Mr. E. L. Woods, and the Vice-President, Major W. H. Heuer. When these lines are read, the exhibition of the association will probably be a thing of the past, but a description of the work presented will be given in these pages in a later number.

The California Camera Club.—This new organization is now *un fait accompli*, all the preliminaries having been arranged at a recent meeting in San Francisco. The following is the board of officers: President, Geo. W. Reed; First Vice-President, Sanford Robinson; Second Vice-President, H. P. Flagler; Secretary, T. P. Andrews; Corresponding Secretary, Wm. N. McCarthy, No. 525 Ofarrell Street; Treasurer, E. J. Molera; Librarian, E. P. Gray; Directors, T. O. C. Marceau, C. J. Wetmore, I. E. Thayer, and H. C. Tibbetts. Messrs. E. P. Gray, E. H. Husher, and H. C. Tibbetts have been appointed a committee to collect and arrange a series of slides for an illustrated lecture, "In and About San Francisco." The new club will doubtless give a good account of itself in the near future.

Photographic Society of Philadelphia.—A special meeting of the society was held on Tuesday afternoon, April 1, 1890, with Vice-President John G. Bullock in the chair. The Chairman announced to the society the sudden death of their President, Mr. Frederick Graff, which occurred on Sunday morning, March 30th. After the reading of the formal call for the meeting by the Secretary, remarks were made by a number of members, expressive of their strong affection and high admiration for their late presiding officer, and deepest grief at his loss. His kindly spirit towards all with whom he came in contact, his painstaking care and energy in all work falling to his share, his great interest in photography, and particularly in this society, whose growth he had watched and fostered from its infancy, were dwelt upon. Among those who spoke were Messrs. John G. Bullock, John C. Browne, Francis T. Fassett, W. H. Walmsley, R. T. Hazzard, Edmund Stirling, Francis Burrows, Evan Ellis, and Dr. Charles L. Mitchell. Letters of condolence were also received from Messrs. W. D. H. Wilson, R. W. Kear, and Charles R. Pancoast. On motion of Mr. Stirling a committee was appointed by the Chair to draft a suitable minute in regard to the death of Mr. Graff for publication in the daily papers, to report at the stated meeting on 2d instant, and also to prepare a more formal memorial to be published by the society at a later date. The meeting then adjourned. At the regular meeting held on April 2, 1890, the following minute, prepared in accordance with the action at the special meeting, was adopted and ordered to be published, after which, out of respect to the memory of their deceased President, the society adjourned. The members of the Photographic Society of Philadelphia desire to testify to their sense of the great loss they have sustained in the death of their President, Frederick Graff. They feel that by his death not only have they lost a most efficient presiding officer, but that each one has been bereft of a dear friend, a sage counselor, and one who gave of his very best to promote the interests and well-being of the association. For nearly thirty years his official connection with the society has been continuous—as Chairman of the meeting called to organize the same, then as Vice-President, and serving two terms as President. He may indeed be called its father. To his untiring zeal for its welfare, the society is in a great measure indebted for the present high position it holds in the photographic world. An adjourned stated meeting was held Wednesday evening, April 9, 1890, with Vice-President John G. Bullock in the chair. Various communications and committee reports were read, and Mr. John G. Bullock was unanimously elected President in succession to the late Mr. Frederick Graff. Dr. Mitchell read a paper prepared by Mr. Frank H. Rosengarten, entitled, "Working Department of the Photographic Society of Philadelphia," which comprised a lengthy plea for enlarging the scope and usefulness of the society. This matter and that of a change of quarters was referred to a committee. A special committee of three was appointed to make any necessary revisions of the by-laws. Mr. Brown made a report of the result of his investigations into the probable reasons for the deposit occasionally found on lantern slides. He had examined a number under a microscope, using a two-inch objective, and he had found that the deposit was not due to a change in the cover glass as had been thought probable. Many of the slides bore evident traces of matter deposited from impure washing water. Other cases seemed to be due to imperfectly removed hypo, and still others had deteriorated from the effects of faulty intensification. He recommended dilute cyanide of potassium for fixation, and bi-chloride of mercury followed by bi-chloride of platinum for intensification. Considerable discussion followed, in the course of which Mr. Carbutt stated that there was no need of intensification in order to obtain great density, as this could easily be obtained by using a well restrained pyro-soda developer, and giving as full an exposure as possible. The meeting closed with the exhibition of two new cameras, a light-weight 8 x 10 Irving camera, and Moessard's Cylindographe, a panoramic camera of French invention.

New Orleans Camera Club.– After four years of patient waiting, the members of the New Orleans Camera Club are now rejoicing in the possession of as well appointed quarters as any in the country. On Wednesday evening, April 16th, the new quarters were thrown open to the public, and we give the following extract from the New Orleans *Picayune:*

"Electricity was freely used to illuminate the rooms. Refreshments were lavishly furnished. As each lady entered the door of the club-room, she was handed a ticket entitling her to a finely finished landscape view or a portrait made by the different members. Around the walls were hung large frames of polished oak, within which were arranged, in tasteful designs, hundreds of photographs, the work of the members, and many were of the highest order of excellence.

"The different outings taken by the club over the several roads furnished ample opportunity for displaying prowess with the camera, and the majority of the views exhibited last night were selected from the results of those trips.

"The club at present has 89 active, 11 honorary, and 4 corresponding members on the roll.

"The first object of interest in the club's quarters is the studio on the top floor of the building, a large room with a glass roof and wide front windows, insuring a perfect illumination for portrait work. A portrait camera, with all the latest swings and attachments, with a $500 Dalmeyer lens, three backgrounds of different designs, a copying camera with a fine lens attached, burnishers, tables, cupboards, lockers for the members, and in short everything used in finishing photographs, complete the furnishings of the studio. The dark room is placed in the rear of the atelier and has six separate sinks with partitions between, with taps for hydrant and filtered water, which can be cooled with ice in the summer. Shelves are placed on each side of the partitions for dishes, etc., and a large electric motor fan drives a powerful current of air into the room, making it cooler within than in the open air. A dressing-room for ladies is also placed in the studio, and nothing has been omitted to make this as attractive as the galleries of the professional workers.

"The meeting-room is carpeted, the windows are hung with lace curtains, a book-case contains all the best photo publications, a handsome dissolving lantern rests in a case opposite, and in the center is placed a baize-covered table surrounded with chairs.

"Private exhibitions of magic-lantern slides are given here for the members, and once a month invitations are issued for public exhibitions at Tulane Hall."

"The guests were ably attended to by the reception committee, composed of Messrs. P. F. Reynes, W. R. Mandeville, M.D., Bernard C. Shields, S. L. Mitchell, Bryan Black, Reeve Lewis, L. E. Bauman, T. W. Castleman, R. H. Palfrey, and A. C. Frietag.

"The club is officered by H. T. Howard, President; Joseph A. Hinck, Vice-President; R. S. Charles, Jr., Secretary; and P. E. Carriere, Treasurer."

The Brooklyn Society of Amateur Photographers held a private reception and exhibition of photographs at its rooms, corner Fulton and Jay Streets, on Tuesday evening, April 8th, from 8 to 11 P.M., for which six hundred invitations had been issued. Each member was represented by a frame containing his own photos properly labeled, there being so many contributions that wall space was at a decided premium. The rooms were tastefully decorated with palms and flowers, and with the aid of Japanese lanterns presented a delightful appearance. During the evening the friends of the members, among whom were many ladies, visited the society, and profuse were the expressions of praise upon the excellence of the work exhibited. The reception committee, consisting of Messrs. G. R. Sheldon, Jr., chairman; Elliot G. Emery, A. Merle Foreman, and C. M. Trowbridge, did the honors for the society to the many guests who filled the rooms during the evening. Principal among the exhibits were the following: A frame of flash-lights and character photos by E. G. Emery; portraits by M. H. Ladd; a frame of marine views at Quogue, L. I. (blue prints), by C. M. Trowbridge; a fine 22x24 bromide enlargement of sloop "Atlantic," by Mr. R. H. T. Halsey; several bright bits of landscape and interior work by E. G. Ackman; some rare detective views by Mr. Allan Ormsbee; a fine collection of Long Island scenery by Mr. H. P. Sewall; Prospect and Central Park views by Mr. Sheldon; pastoral scenes by Mr. Weld; metropolitan views by Mr. McConnell; views at Foxhurst and blizzard pictures by Mr. V. Trowbridge; Alaskan scenes by Mr. Forman; views of Prospect Park by Mr. Aleck Ormsbee, etc.

Photographic Society of Waterbury, Conn.—The club now numbers about 35 members. It has well fitted and lighted rooms at 63 Bank Street, and a large dark-room. Is a member of the New England Lantern Slide Interchange. A number of periodicals appertaining to photography are on file at the rooms, and members have access to them at all times. Meetings held 1st and 3d Fridays in each month. We have found it to our advantage to have a purchasing agent who buys all goods required by the members of the club, thus affecting a large saving to our members by getting larger discounts than individual members could get. The officers are as follows: Chas. R. Pancoast, President; E. H. Everitt, Vice-President; E. E. DeWitt, Secretary; Geo. S. Husher, Treasurer (also club agent); E. E. DeWitt, S. B. Hill, and E. W. Mooring, Executive Committee.

The Amateur Photographic Society of Oregon was organized on the 8th of April, 1890, with a charter membership of twenty-one. The following officers were elected for the ensuing year: P. S. Bates, President; Hugo Goldsmith, Vice-President; S. J. Kraemer, Secretary; E. B. Baker, Treasurer. Quarters have been secured in the Ainsworth Building, where a reception and dark-room have been fitted up with all modern appliances. The society will be pleased to see any amateur photographer visiting their city, and those producing credentials from any other photographic society by applying to any of the foregoing named officers, will be extended free usage of dark-room.

The Richmond Camera Club was organized in the parlor of the Y. M. C. A., Tuesday evening, April 1st, starting with a membership of twelve. The following officers were elected for the ensuing year: Professor Chas. H. Winston, President; R. A. Lancaster, Jr., Vice-President; C. D. Habliston, Secretary and Treasurer; Dr. Phil Taylor, Prof. Chas. H. Winslow, R. M. Blankenship, R. A. Lancaster, Jr., and C. D. Habliston, Executive Committee. The second meeting of the club was held at the Y. M. C. A., April 10th, for the adoption of a Constitution and By-Laws. Stated meetings of the club will be held hereafter the first Tuesday in each month. A great deal of interest is manifested, and we hope to have all the amateurs in the city enrolled before the end of the year.

St. Louis Camera Club.—At the annual meeting the following officers were elected: Robert E. Collins, President, 404 Market Street; John B. Holman, Vice-President; Walter H. Wilcox, Secretary and Treasurer, 721 Pestalozzi Street; Eliot C. Jewett, Charles M. Alexander, Robert E. M. Bain, Executive Committee.

APPOINTED COMMITTEES.—*House Committee.*—Chas. H. Beggs, 510 Pine Street, Geo. B. Compton, W. R. Bascome. *Lantern Slide Committee.*—H. B. Alexander, St. Louis National Bank, Wm. M. Butler, A. P. Erker. *Membership Committee.*—Chas. W. Melcher, 615 North Fourth Street, Chas. S. Moffitt, Henry Blattner.

Upon motion of Mr. E. C. Jewett, a vote of thanks was tendered Mr. R. E. M. Bain for his long and efficient services as President of the club. On motion adjourned. After the meeting quite a number of slides contributed by various members of the club were exhibited, the special features being views taken in Europe by Mr. Soldan and Mr. Butler, and views of the burning of an elevator and mill, by Mr. Bain.

Brookline Camera Club.—The first outing of the club occurred on Fast-Day. Several fine negatives were made of scenery in the vicinity of the Blue Hill Observatory, and Mr. W. G. Chase secured a number of interesting "situations" with his Kodak. These will be shown on the screen at the next meeting.

Lynn Camera Club.—Activity has been the order of the month at the rooms of this enterprising club. Many improvements have been added, including, among other things, a "Boston Ideal" dissolving lantern, burnisher, head-rest, side-screens, backgrounds, portrait camera and stand, enlarging camera, and a transparency exposing box. An exhibition of the work of the members will be held in May, and diplomas will be awarded to the best work in the following classes: Albumen or silver prints, aristo prints, carbon prints, blue prints, platinum prints, contact bromide prints, bromide enlargements, positive films, transparencies, and lantern slides. The slides must be three in number. All prints must be framed, and where frames contain more than one print each print must be lettered. Both negative and positive must be made by the exhibitor. In addition the Eastman Company have offered a No. 1 Kodak for the best bromide enlargement from a Kodak negative, and one dozen 14 x 20 bromide paper for the best enlargement of any negative. The following meetings have been held: *Regular monthly meeting*, Tuesday evening, April 1st, at which thirteen new members were elected; *an exhibition of slides*, Tuesday evening, April 8th, at which one hundred slides from the Springfield and Worcester Clubs were shown, the most notable of the Springfield set being "Curtains of the Sky," "Old Slate Mill," "River Bend," and "Cattle Grazing on the Range;" and of the Worcester set were "Landing a Trout," "A Woodland Brook," "The Cascade," "At Elm Park," "A Jersey Cow," and "Steamer Lowering Funnel to go Under Blackfriar's Bridge, London."

On Tuesday evening, April 15th, a series of sixty-two views of Providence and Narragansett Bay, the work of members of the Providence Club, were shown to a large and appreciative audience. The slides were of a high order and were greatly enjoyed by all present. The club is discussing the advisability of joining the Boston and Providence Clubs in an excursion down Narragansett Bay, June 17th, the great Massachusett holiday.

Tuesday evening, April 22d, Mr. W. G. Chase entertained the members with his illustrated lecture on Florida. Mr. Chase's ability as a lecturer makes him a welcome visitor.

The Camera Club of Hartford.—The regular monthly meeting was held in the club rooms, Tuesday evening, April 8, 1890. The routine business was soon dispatched, and the topic for discussion, "Flash-Light Photography," was introduced. It was opened by Mr. George H. Peters with a very interesting paper upon the subject, from which we give a few extracts:

"The first thing to be considered in this subject is the material with which the flash is produced, and the effect of the actinic energy thus obtained. The flash powder is generally composed of the metal known as magnesium. It is used, either in a pure metallic state, or is mixed with other ingredients, such as chlorate potash, picric acid, etc., which furnish a supply of oxygen for its combustion, and cause it to burn with extreme rapidity and brilliancy. In the latter case it can be ignited by a taper, but care must be taken to have the taper of sufficient length, or the person firing the charge runs the risk of being burned by flying particles of the hot metal. The pure metal requires to be burned in a flash lamp or some similar apparatus, in order to obtain a rapid and brilliant illumination. This is accomplished by numerous devices which are well known to most amateurs, some of which are extremely ingenious. The principle, upon which most of them are constructed, is to spray the finely divided particles of magnesium into a flame so that it may receive a supply of oxygen from the air to secure complete combustion. Combustion is nothing more than the oxidizing of a substance, which upon receiving the oxygen throws off its products and emits heat and generally light. Before we burn our powder we must be able to see even in the 'mind's eye' the effect it will produce in illuminating the subject, for upon this much of the success of the picture depends.

"The laws governing the diffusion of light are very simple, and when once understood, greatly facilitate operations in flash-light photography. Light is supposed to be caused by the vibration of a hypothetical but imponderable substance, called *æther*, which pervades all space and even penetrates between the atoms which compose a body. When these vibrations fall upon the retina of the eye they produce the sensation called light, or striking upon a photographic plate they change the arrangement of the silver molecules, and thus enable the developer to bring to view the latent image. The course followed by a ray of light, if left to itself, is a straight line. This not only enables us to see straight and measure angles, but also to calculate the effect of rays emanating from a luminous source. Another law of light is that it decreases in quantity according to the square of the distance from its point of origin. Take for example a flash-light at one end of a room twenty feet long, the intensities of illumination, in the middle of the room and at the end farthest away from the light would be as 4 to 1. A photographic plate will be affected by the light rays in the same ratio as the eye. It would therefore take four times as much flash powder to give the correct exposure to an object at the end of the room as it would in the middle. In order to obtain the desired light and shade effect, and also to break up harsh shadows, it is necessary to have recourse to reflectors. A good reflector is obtained by using a sheet of tin, curved to about half-cylindrical form, and held in this position by a string tied around it. While in this shape it will stand by itself on any smooth surface, and center the light upon the subject.

. . . .

"Another part of this subject is the consideration of the relationship between the quantity of powder and the size of the stop to be used. Thus the stop f—12 would call for but one-fourth as much flash-powder as f—24, the amount of light reaching the plate being according to the square of the angular aperture of the stop and lens used. A photometric comparison of the relative illuminating powers of the various varieties and brands of magnesium and flash-powders in the market, would be quite a boon to the flash-light photographer. It would be a valuable piece of work for some amateur who has the requisite time and facilities, and also the necessary appreciation of minute measurements and exactitude."

At the conclusion of Mr. Peter's paper, Mr. F. D. Berry took a flash-light picture of the members present, using a charge of fifteen grains of Blitz Pulver, with stop f—13; developed with pyro and soda, resulting in a fine negative. A general discussion followed till the hour for closing, when President Parmele announced that at the next meeting Mr. Chas. R. Loomis, the artist, would give the club a talk upon the composition of pictures, and requested members to bring specimens of their work.

Lowell Camera Club.—The last regular meeting of the club for the season was held at Morrill's studio, March 18th, with the largest attendance during the year. The secretary gave a talk on the composition of pictures, illustrating the subject with diagrams. A letter from the president of the Waterbury Photographic Society was read. It gave a detailed description of the methods used by that society in producing their slides. The principal things necessary, he said, to get good slides are good negatives, acurate focusing in the camera, and a standard developer. These points were discussed by the club, some preferred to expose the plates with care, and then if the standard developer proved to be too strong or too weak, vary the strength to meet the exposure rather than expose to exactly suit a certain developer. But the excellent slides furnished to the New England Lantern Slide Exchange by the Waterbury Society certainly prove the practical value of their method. These slides were excellent both technically and artistically considered.

The Hartford Camera Club slides were also shown. The description text, entitled " In and Around Hartford," was read and added much to the interest of the slides.

At an extra monthly meeting of the club, held April 15th, the slides of the Springfield Camera Club and the Worcester Lantern Slide Club were exhibited. These were the last sets in the exchange, and each of them contained some good work. The slides of one of the Worcester club were on plates of his own make. The club voted to continue a member of the New England exchange for the coming year.

A special meeting was held April 22d. Dr. Moses Greely Parker, a member of the club, gave a very interesting discourse on lightning, illustrating the subject with his slides, many of which he made from his own negatives taken direct from flashes in the sky. He has given much study to electricity, and was the first to show by photography the peculiar rotary motion that the current always takes. As the views were thrown upon the screen he pointed out the motions in the different flashes. He said the electrical current may travel without dividing or it may divide and sub-divide; twist and meander in its passage; its image on the plate presenting such a variety in form that many names have been given descriptive of its general appearance, with no reference to the real motion of the current itself. He designated these motions, the twisted, the curled, and the straightforward. The twisted motion resembles a loosely twisted rope; it twists both ways, usually from left to right, but it sometimes reverses its motion in the same course. The curled motion resembles a twisted ribbon or shaving as it curls from a carpenter's plane, and in some respects is most remarkable. The straightforward presents straight lines in its track, and evidently travels with great force. One of the important practical uses to which this discovery of the rotary motion of the electrical current has been put, is in reducing the resistance in wires. Dr. Parker has shown that the resistance is much reduced in wires when twisted to conform to this natural law.

After the lecture Mr. J. H. Weaver, of New York, gave an instructive talk on how to get the best results in photographic work. He demonstrated the method of printing and developing positive films before the club, and the subject was freely discussed. This meeting will probably be the last indoor meeting of the club for the season. It is proposed to hold several field days during the summer, and it was voted to hold an exhibition of photographic work in the fall.

Schuylkill Camera Club.—The club held its first annual exhibition at the Academy of Music, Pottsville, Pa., Saturday evening, April 19th. A large audience was present and greatly enjoyed the exhibition of slides. The entertainment was divided into two parts, the first including views of Arabia Petra, and the second views made by the members of the club. The lanterns were operated by E. F. C. Davis, who is the Vice-President. The following members exhibited: Rev. B. F. Patterson, A. L. Phillips, Jay G. Shumway, A. W. and W. L. Sheafer, Fred. C. Eberle, Mrs. E. F. C. Davis, Ed. Borden, Miss Elena Roads, Bert Bretz, Robert Morris, John T. Werner, Jr., Charles H. Weltjen, Jr., Professor S. A. Thurlow, C. W. Parkin, George M. Bretz, and E. F. C. Davis of Schuylkill, S. W. Patterson of Mahanoy City, A. R. Lattimore of New Boston, Wm. H. Rau and Geo. W. Ennis of Philadelphia, and Rev. A. L. Loder of Norwood, Mass. The club membership is now forty-four, of whom five are ladies.

Syracuse Camera Club.—A lantern-slide exhibition was given Friday evening, April 18th, the slides shown being the well-known "Illustrated Boston," from the Boston Camera Club, and a set from the Amateur Photographic Society of Baltimore. This set covered a wide range of views, including Professor Rowland's charming Norwegian series. The exhibition was a thoroughly enjoyable affair.

Newark Camera Club.—The Newark Camera Club held its annual meeting April 14th, and elected the following officers for the ensuing year: President, William A. Halsey; Vice-President, Charles LeRoy; Secretary, C. G. Hine; Treasurer, J. M. Foote; Executive Committee, Miles I. Anson, C. G. Hine, Dr. T. Y. Sutphen, J. M. Foote, Charles LeRoy, F. T. Fearey, Paul Thiery, H. C. McDougall, and Guy J. Edwards. The annual reports showed the club to be in a flourishing condition. On May 1st it moves to new quarters at 828 Broad Street, which are now being fitted up. Some time during May the third public lantern-slide exhibition of work by the members is to be given, when its numerous friends will have an opportunity to see what the club is doing in that line.

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CORRESPONDENCE.

THE AMATEUR PHOTOGRAPHER IN EUROPE.

[Continued from page 158 of No. 4.]

In Holland an amateur photographer from foreign parts is treated very nicely. The people are more like our own folks. They have a fellow feeling for the people who hail from New York. Perhaps this is because an amateur photographer, Mr. R. B. Roosevelt was American Minister at The Hague. A month in Holland, taking pictures, so far as freedom of action was concerned, was like the same time occupied in America; but it was very different so far as subjects for the camera were presented. You take a shot at a landscape. Your print reveals a level plain with hundreds of black and white Holstein cattle, and thousands of fine sheep, with innumerable flocks of crows, darkening the sunlight, and swooping over the fields with an airy flight, unknown to those birds in America. Some of these crows are white, and some have brownish-white wings, but the great majority are of the regulation black variety. In some parts they fairly swarm. Your landscape will have in addition, a score or more of windmills, and perhaps the tops of ten or a dozen high-peaked houses. It will also have long lines of narrow canals, and perhaps, if your camera has been pointed properly, it will return you the picture of a sloop canal-boat slowly passing alongside of the roofs of the houses. These navigable canals are the high-levels, into which the windmills are constantly pumping water from the smaller or divisional canals of the levels, fifteen or twenty feet below. It is to these lower levels you must go if you want to get a picture of farm-houses, or of any of the small towns. After a while, you find that a few landscapes, with an occasional clump of low trees, close to the houses, differ but little from each other. You want more variety, but you find it not in the landscapes. They are of as little variety as any that can be taken by a camera on the broad prairies of our "Great West," or in the monotonous "pine barrens" of our own state of Florida. For change you must point your picture-maker at the quaint old houses, of all the old-fashioned styles imaginable. Some low and squat, with pyramidal roofs and many dormer windows. Others with sharp roofs and fancy gables. Many pretentious dwellings look like three or four constructions, one on top of the other, each story apparently built on top of the other, by the succeeding generations of owners as they climbed up the ladder of wealth, or required more room for their increasing families.

On nearly all of these houses, at the gable-end of the top-most story you will be sure to see a projecting beam, to which is attached a pulley, with a rope and an iron hook dangling in the air. This is a great convenience to the Dutch house-holder. He can sling his furniture, or provision barrels, from the ground, and hoist it to any floor of his dwelling without the bother of carrying the burden up several flights of crooked, narrow stairs. As most of the windows in these houses open inward, like so many doors, the load is very readily delivered upon any floor that may be chosen for its deposit.

But for even greater variety point your camera at the people you will see around you in Holland. Nearly every district has a distinctive dress for the inhabitants, more particularly for the women folk. The ancestors of these people were thus clad three centuries ago, and while the men have changed their fashions to some extent in these later days, it is not at all difficult to find subjects for the camera, who look very much like the old style of folk to be seen in the pictures that Rembrandt painted. The costumes are very quaint, and those of the young people differ but very little from that of the fathers and mothers. They are indescribable, except to say they are picturesque, and very different from our modern fashions. Big baggy breeches, and short over-shirts for the men; while the women wear bright colored gowns, and neck-kerchiefs, with white caps of highly starched linen, made to fit closely, or to stand forth a foot or two from the head according to the fashion of the district to which the wearer belongs. The amateur photographer who delights in shooting a variety of photographic game, will find a bonanza in the rural districts of Holland.

In most of the cities, particularly in Amsterdam and Haarlaem, the amateur will find pleasure in photographing old style houses, or taking pictures of the bridges that span the numerous canals. These bridges are of all styles of architecture, from the oldest one, built of stone or wood conturies ago, to the latest on the most approved cantilever plan of iron and steel. There is very little ornamentation on the older bridges, but there is almost every form known to bridge builders; from the low flat bridge, to the semi-circular arch, high enough for a vessel to pass under with lowered masts. Most of the sailing boats are rigged to lower their masts at short notice, for convenience in getting to various parts of the large cities. One class of these bridges have narrow draws, two or three feet wide. Another class is rigged to open upward, with weights which hold it in position. These bridges are opened and closed by the boatmen, and an amateur photographer can always get a shot at something worth firing at, by waiting to take a picture as soon as one of these bridges is opened for a sloop to pass through. Some bridges are like water-gates. They swing—when unlocked—by the force of the water pushing them to one side like a door. They are closed by the hauling in of a chain located somewhere beneath the structure. A series of photographic pictures of the bridges that are to be seen in Amsterdam alone, would be a variety show in itself, to say nothing of the quaint old carts, hauled up at either end while a boat is passing. These carts are drawn by all kinds of animals. The smaller vehicles are usually drawn by an old woman—or a young one—and a pair of dogs hitched under the cart body, between the wheels. The larger carts have cows, oxen, donkeys, or horses for their motive power.

Sometimes a cart will appear having three or four different kinds of animals attached. It is not unusual to see a Dutch countryman bring in a load of produce on a cart, to which is harnessed a diminutive donkey, a small cow, a large horse, and two or three dogs. Sometimes, instead of the donkey, horse, and dogs, there will be the cow and one or two strapping women. Riding on the load is, perhaps, the big husband and father, smoking contentedly a long-handled pipe, with a bowl big enough to hold a quarter of a pound of tobacco. An amateur photographer from America, or any other country, could cover dozens of plates or yards of films with just such pictures as these, without being obliged to hunt up such subjects. Indeed they are only too common, and for that reason probably not as frequently photographed by the Dutch amateurs as by their brethren from other countries.

To conclude this already too long account of what an amateur photographer sees and experiences in Europe, it should be mentioned that he nowhere finds—except perhaps in London—the materials he commonly uses at home. He must take with him his own plates, or films, and enough to last him throughout his trip. He would do well to develop his plates, if he can, at every convenient stopping place, and thus save some loss at the custom houses, where he does not always meet accommodating officials. Unmounted photographs can be purchased all over Europe, at moderate prices, but they do not as a rule quite fill the bill of an amateur who wants his picture as *he* sees it, not as some one saw it perhaps two or three years before.

Oh! that some bright, inventive fellow would produce a camera that would take a 5x8 plate, with ready-focusing lens, concealed in a neat basket, which, when slung upon one's arm, would level itself, and show the operator just what he was going to get when he pulls the trigger. Then the bright fellow should supplement this with a light *transparent* film, upon which at least six dozen pictures could be made without recourse to a dark-room. With this invention, and a process for easy development and fixing under almost any lack of conveniences, the trials of the American amateur photographer on a trip through either Europe or his own country, would be be reduced to a minimum, and instead of being full of weariness and vexation, become a pleasure and a joy, not only to the traveler himself, but to those friends who will greet him on his return and be glad that he has brought back so many "glimpses" of the sights that are to be seen by an Amateur photographer in foreign lands.

J. P. B.

Rotterdam, Holland.

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Editors American Amateur Photographer, Brunswick, Maine:

GENTLEMEN:—On page 200 of the *Photographic Times* for 1887, is an article by Rev. W. H. Burbank, one of your estimable editorial staff, on "Coating Paper with Emulsion." Invaluable directions are given to the inexperienced photographer in the various particulars of making the emulsion and coating the paper. The formula, as given, is for a bromide of silver emulsion, and, of course, the resulting sensitive paper is bromide paper. There is one statement, however, regarding the quantity of emulsion used for coating a given surface of the paper, that to me seems somewhat surprising to say the least. He recommends that one dram of emulsion be used in coating every ten square inches of surface, and this amount of the sensitive mixture, if I mistake not, is allowed to remain on the paper *without draining*. It must be remembered that this is *positive* paper. Now for an 8x10 print there would be *one ounce* of emulsion constituting its film. Such a large quantity is contrary to all the formulas that I have hitherto made acquaintance with. The Eastman Company certainly use less than half as much emulsion in coating their Permanent Bromide Paper,—indeed I doubt if they use more than two drams for an 8 x 10 sheet. When they first began the manufacture of the paper, I believe they coated the same much heavier than they do now; and, unless I am greatly at fault, it was Mr. F. C. Beach, one of the editors of the AMERICAN AMATEUR PHOTOGRAPHER, who suggested that they coat their bromide paper more thinly. Now will Mr. Burbank explain why he uses so large a quantity of emulsion in coating his bromide paper? Was it for the purpose of burnishing the prints? and if so, why not use a glazed or solid surface paper and apply a thinner coating? If there were other reasons, will he not kindly explain? Furthermore, may I ask him if he can recommend any special formula for a printing-out gelatino-chloride emulsion, something such as the one given by Dr. Sinclair, on page 186 of the *American Annual of Photography* for 1888? While the doctor specifically recommends the formula for transparencies and lantern slides, I do not see why it would not answer as well for a printing-out paper. Would Mr. Burbank advise any modifications of the formula, and what precautions should be observed in coating the paper so the same could be burnished so that the results would equal burnished albumen prints? Also what preservative should be added to the emulsion, and how long would it probably keep? I shall be very much obliged if Mr. Burbank will advise me through the columns of the AMERICAN AMATEUR PHOTOGRAPHER.

Very Truly Yours,
W. H. GARDNER.

Bristolville, O., March 24, 1890.

[NOTE BY MR. BURBANK.—I fear that Mr. Gardner is endeavoring to take a rise out of the editor. He is entirely correct in saying that one ounce of emulsion for an 8 x 10 plate is an abnormally large amount. Half that amount is amply sufficient for a positive paper. At this distance of time I cannot recall any special circumstances connected with the work which led to my giving so large a quantity as necessary. I remember that at the same time I was making dry plates, and I have the impression that when writing a description of the method of coating paper I inadvertently gave the amount of emulsion necessary to coat a plate as the proper quantity for paper of the same size. It is possible that I drained the emulsion off at that time, I know that I did later on, and neglected to mention that important fact. At all events the statement was incorrect, and I thank Mr. Gardner for calling my attention to it and so giving me an opportunity of correcting the error. My experience with gelatino-chloride emulsion for printing-out paper is too limited to warrant me in attempting to advise so old a hand as Mr. Gardner, who probably knows more about it than myself. The formula of Mr. J. Barker, given on page 86 of my "Printing Methods," gave me good results in the days when I had leisure to prepare my own paper. Paper prepared in this way seemed to have good keeping qualities. But why not use Liesegang's formula? I see no reason why any firm emulsion paper should not be burnished if proper precautions are taken. Of course emulsion paper must be dry when burnished, and it might be advisable to harden the film well with chrome alum. As I have never burnished my own prints, I have never considered the question of modifications in the emulsion for that purpose.]

BOOKS AND EXCHANGES.

Do you use a camera? and do you ride a wheel, or propose to do so? Then read Mr. J. W. Fosdick's article, "Wheel and Camera in Normandy," in May *Outing*, and whilst you are traveling in the coming summer you may be able to lay in a store of observation and illustration with which, like him, you may delight thousands of the less fortunate stay-at-homes.

PHOTOGRAPHIC SPECIALTIES. By Miller & Co., Brooklyn, N. Y.

This is the title of a neatly arranged price-list of the photo specialties handled by the enterprising house whose imprint it bears. Special prominence is given to printing papers. Of these the firm manufacture an excellent blue paper ferro-prussiate boards, imperial gray paper, siennatype and excelotype papers, each giving different effects. A practical looking hand camera is quoted at $12, and still another one at $5, probably the cheapest practical hand camera on the market. We advise our readers to send for a copy of "Photographic Specialties."

THE LIGHTING IN PHOTOGRAPHIC STUDIOS. By P. C. Duchochois, New York, 1890. P. C. Duchochois.

With the compliments of the *Photographic Times* we have received a valuable little treatise by the veteran photographer, Mr. Duchochois, dealing with the important question of lighting subjects for portraits. Mr. Duchochois' long experience as a photographer assures the judicious treatment of the matter in hand, and a reading of the book has convinced us that he has done his work well. The chapters on "General Principles," "Different Modes of Distributing the Light," "Rules and Effects of Lighting," "The Glass House," "The Lighting of the Model," and "Treatment of the Eyes," contain many valuable hints and directions.

TRAITE ENCYCLOPEDIQUE DE PHOTOGRAPHIE. By Charles Fabre, Paris, 1890. Gauthier Villars et Fils.

We have received the tenth part of this monumental work containing a description of different methods of coating flexible supports with emulsion, and a lengthy chapter on retouching portrait and landscape negatives.

Messrs. Perken, Son & Rayment send us their price-list for-1890, in which is given a classified list of the long line of photo goods manufactured by them. The list includes cameras, lenses, burnishers, tripods, lanterns, and all the thousand and one things which go to make up a complete photographic plant.

Messrs. W. & D. Mogey send their catalogue of lenses, of which ten different varieties are listed at various prices. They also manufacture a neat combination focusing glass and finder, and a business-like hand camera called the "Zenith." We call attention to their advertisement in this number.

The *Beacon* makes its appearance on the first of the month instead of the fifteenth as heretofore. Although the *Beacon* has not always treated us to honeyed words of flattery, we bear it no malice, and we trust that the new departure will bring it increased prosperity.

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PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

Markley's Portable Dark-Room.—A light portable dark-room or developing closet, in which exposed plates may be safely and comfortably developed when a regularly appointed room is not at hand, is something which many of our readers will appreciate. One of our advertisers, Mr. J. H. Markley, has evolved just such a room, and calls attention to it in this number. It is extremely compact and light enough to be carried in the hand, and its internal fittings are well appointed. For the tourist or the amateur who is unable to find an abiding place for his development paraphernalia, Markley's dark-room will prove a useful article. The price is less than one-half that asked for the English portable developing rooms.

The "Universal" Camera.—We have recently had the pleasure of examining and testing the "Universal" camera, manufactured by the Rochester Optical Company. We say "pleasure" advisedly, since in these days of cheap outfits it is downright pleasure to handle a box so thoroughly well made and finished in every detail as the "Universal." Good cameras cannot be had for a song. Selected mahogany, fine brass work, accurate fitting and perfect finish, cost money. The "Universal" has all these and a degree of adaptability of means to ends, compactness, lightness, and strength, which places it among the best of American cameras. The plate holders are models of convenience, simple, light, and compact.

Photo-Micrographic Camera.—From W. H. Walmsley, Ltd., Philadelphia, we have received a photograph of a new and simple camera for use with the microscope. It consists of an oblong box provided with a flexible hood in front for receiving the end of the microscope body. At the back of the box, in front of the plate holder, is placed a wooden diaphragm with a round opening to cut off all reflections. The camera is mounted on a convenient stand to bring its center level with the microscope body when it is brought to a horizontal position. The price of the camera is $10, and we know from personal experience that good work can be done with an apparatus no more complicated than this. For beginners in photo-micrography nothing better could be desired.

The "Autocopyist."—The United States Supply Company send us an ingenious piece of apparatus of French invention, designed to simplify the phototpye or collotype process for amateurs' use. In a neat wooden case are contained a roll of gelatinized paper, two printing rollers, a supply of ink, an inking plate, sponges, and the "Autocopyist" itself, which is nothing more than a strong wooden frame designed to hold the paper printing surface tightly stretched for printing. Heretofore the substratum, on which the bichromated film is spread, has been a glass or metal plate, and the difficulty of coating and drying these plates, together with the uncertainty attending their exposure under the negative, has been a hindrance to the use of the process by amateurs for the reproduction of their negatives in permanent pigment of any desired color. These difficulties are in a large measure overcome by the "Autocopyist." The gelatinized tissue is sensitized in the bichromate bath, dried in optical contact with a sheet of polished glass, and then exposed under the negative. As with albumen paper the progress of printing is easily watched. After printing, the paper is washed to remove the bichromate and then dried. When prints are wanted the tissue is soaked in water, placed in the "Autocopyist," and the prints struck off under an ordinary letter copying press. We have submitted the apparatus to practical tests, and we believe it to be well adapted to the use of amateurs who wish to attempt photo-mechanical printing. To be sure we had some little practical knowledge of the collotype process to supplement the somewhat meagre directions sent out with the apparatus, but a modicum of care and thoughtfulness will soon enable any one to make passable prints. Better ones will come with practice. Having in mind some early experiments of our own in this same direction, we had some suspicions that the continual dampening, necessary to produce clean and even work, would soon cause the film to leave its paper support; but after pulling something like 500 prints from a single tissue with no signs of blisters, we believe that there is little cause for fear in this respect. But even with the "Autocopyist" the collotype process is not without its difficulties. There are many little dodges not down in the books which contribute largely to the quality of the prints. These are known only to practical workers who are, as a rule, chary of imparting their knowledge to the *premier venu*. Some of them we have been fortunate enough to learn from actual practice, and in our June number we hope to begin a short series on "Photo-Mechanical Printing Methods" from the standpoint of an amateur.

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United States Photographic Patents

Issued in April, 1890.

APRIL 1st.

19,737—Design patent, photographic album; N. Lochbaum, Berlin, Germany.
424,564—Photographic camera; W. B. Luce, Boston, Mass.
424,768—Photographic burnishing machine; W. G. Entrekin, Philadelphia, Penn.
424,857—Holder for photographic plates; P. Chouteau, St. Louis, Mo.

APRIL 8th.

425,005—Photographic magazine camera; F. H. D. Schwarz, St. Louis, Mo.
425,130—Camera; C. F. Getler, Matteawan, N. Y.
425,306—Printing frame support; A. J. Dawdy, Goshen, Ind.
425,319—Lamp for use in photographic dark-rooms; Frank Haes, North Kensington, Middlesex County, England.

APRIL 15th.

425,420—Negative holder; E. Gillis, Kalamazoo, Mich.
425,775—Mount for photographs; H. N. Gale, Bristol, Conn.
425,812—Vignetter; H. J. Lloyd, Wyalusing, Penn.
425,958—Device for holding sensitized paper in contact with negatives; W. J. Read, Jr., Boston, Mass.

APRIL 22d.

426,023—Petroleum lamp for photographic purposes; M. Jljinsky, Charlottenburg, Prussia, Germany.
426,054—Photographic negative film holder; F. S. Osborne, Chicago, Ill.
426,283—Plate-holder for mechanical printing; H. H. E. G. Kohl, Leipsic-Reudnitz, Germany.
426,295—Photographic camera; J. Merritt, and W. E. Spencer, Brooklyn, N. Y.
426,296—Photographic camera; J. Merritt, and W. E. Spencer, Brooklyn, N. Y.
426,411—Apparatus for producing instantaneous flash light; A. Hemsley, Philadelphia, Penn.
426,420—Photographic dry plate coating machine; F. J. Swaine, St. Louis, Mo., and C. S. Moody, Woodland, Mo.

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List of Dark-Rooms Open to the Use of Amateurs.

LURAY INN—*Luray, Virginia.*
PROSPECT HOUSE—*Blue Mountain Lake, Hamilton Co., New York.*
HIGH FALLS HOUSE—*Dingman's Ferry, Penn.*
THE STANLEY HOUSE—*Lake Joseph, Muskoka, Ont.*
CASCADE LAKE HOUSE—*Adirondacks, N. Y.*
HOTEL CORONADO—*San Diego, California.*
THE RAYMOND—*East Pasadena, California.*
SAN MARCO—*Santa Barbara, California.*
DEL MONTE—*Monterey, California.*
SPENCER HOUSE—*Niagara Falls, New York.*
SLIDE MOUNTAIN HOUSE—*Big Indian Catskill Mountains, New York.*
FORT WILLIAM HENRY HOTEL—*Lake George, New York.*
PROFILE HOUSE—*White Mountains, New Hampshire.*
THE WESTPORT INN—*Westport, New York.*
BREEZE LAWN—*Hunter, New York.*
LAKE VIEW HOUSE—*Bolton, Lake George, New York.*
MOUNTAIN PARK HOTEL—*Hot Springs, North Carolina.*
THE CLERMONT HOUSE—*Southwest Harbor, Mt. Desert, Maine.*
COLE'S HOTEL—*Kidder's Ferry, Cayuga Lake, New York.*
THE CHISWICK INN—*Littleton, New Hampshire.*
SAM. C. PARTRIDGE—*San Francisco,* 529 *Commercial Street.*
THE CHICAGO CAMERA CLUB—*Chicago,* 182 *Wabash Avenue.*
GAYTON A. DOUGLASS & CO.—*Chicago,* 185 *Wabash Avenue.*
THE BLAIR CAMERA CO.—*Chicago,* 208 *State Street.*
W. H. WALMSLEY, LTD.—*Philadelphia,* 1022 *Walnut Street.*
R. H. MORAN—*New York,* 396 *Broome Street.*
LOEBER BROS.—*New York,* 111 *Nassau Street.*
BARKER & STARBIRD—*Boston,* 56 *Bromfield Street.*
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W. C. RUSSELL—*Baltimore, Md., North Charles Street.*
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OSCAR FOSS, 841 Mission Street. **TAYLOR, TAYLOR & HOBSON.**
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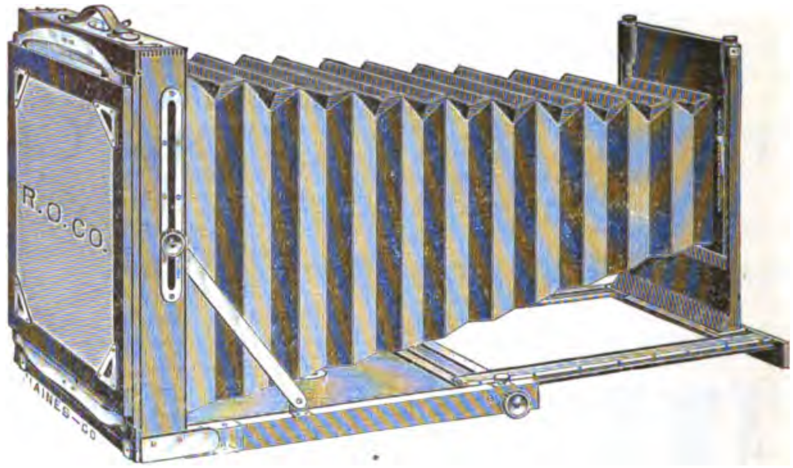
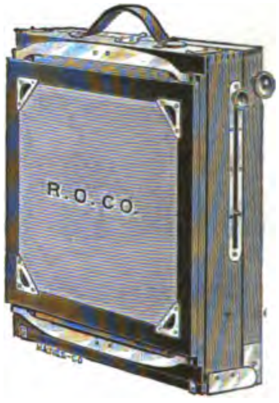
The "Universal" Camera.



CAMERA FULLY EXTENDED.

PARTIALLY FOLDED.



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The Universal Camera is a modified English Pattern and is the most compact camera in market, the 6½ x 8½ being but 2⅝ inches thick when folded and weighs but 5 pounds, and has a draw of 20 inches.

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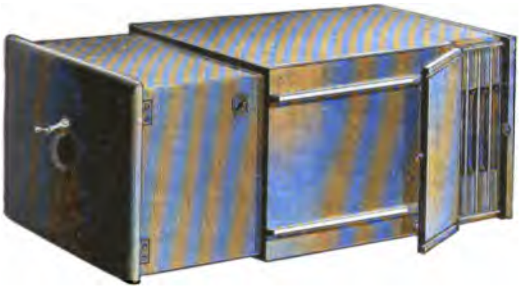

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They may be removed and a 3¼ x 4¼ Eastman Roll-holder substituted as easily as on an ordinary view camera. We advise the use of the f-16 stop for fair weather work, and the Ultimate Developer.

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This enormously increases the capacity of any lens, either for rapidity or extreme definition and depth of focus. Even landscape lenses may be used with high speed shutters.

Used full strength, gives strong, black deposits; when well diluted with water, gives remarkable detail and a fine, warm tone. For ordinary use it must be well restrained, either by using many times over with small additions of fresh solution, as required, or with bromide of potash or soda.

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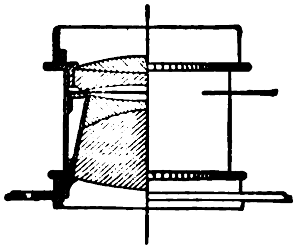

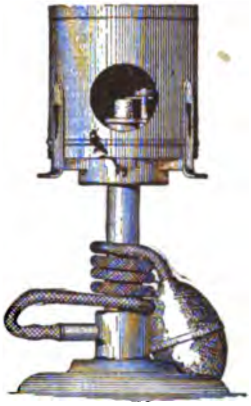

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Express paid.

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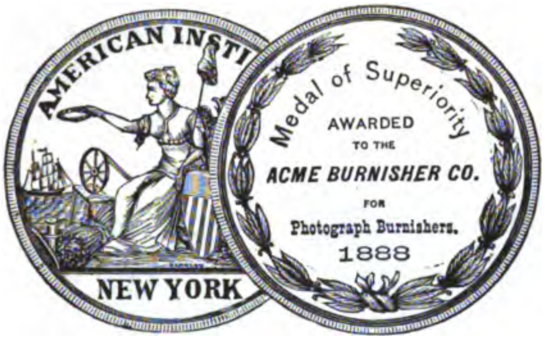

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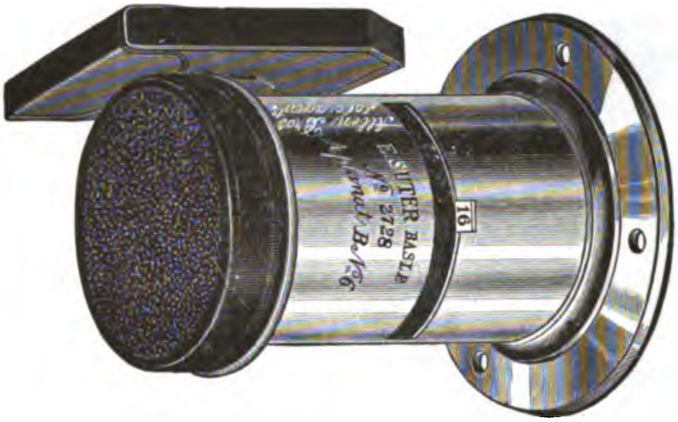

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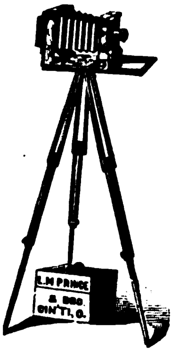

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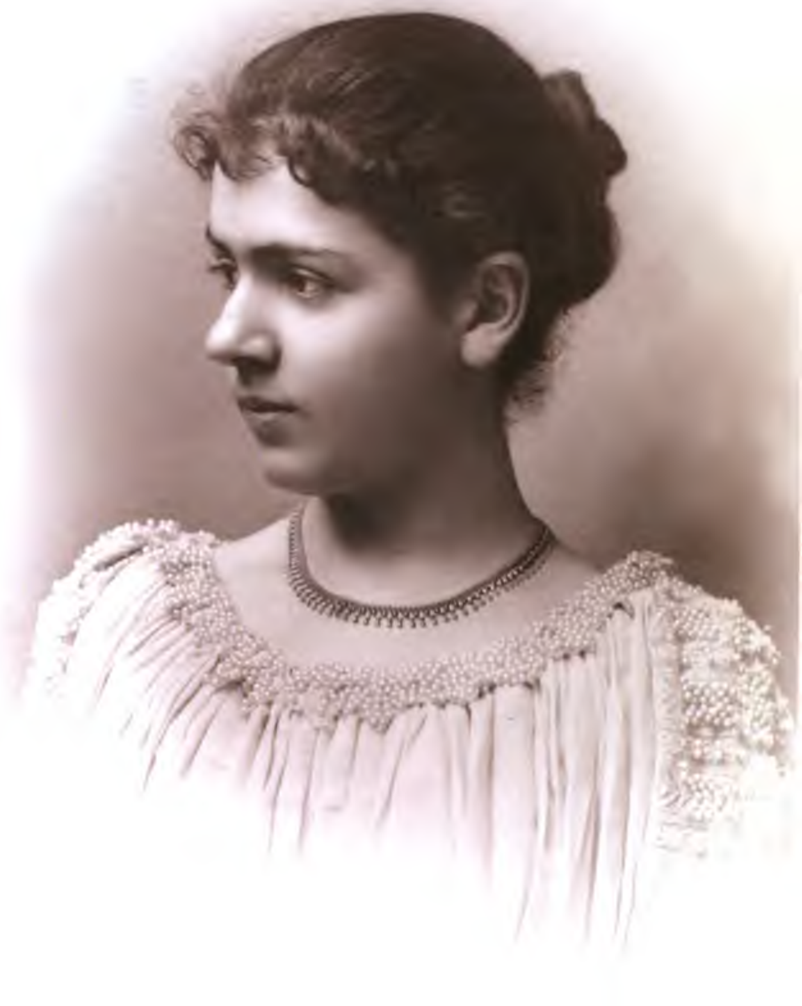

GREEK GIRL.

From a negative by Catharine Weed Barnes.

ARTOTYPE,
E. BIERSTADT, N. Y.

THE AMERICAN
AMATEUR PHOTOGRAPHER

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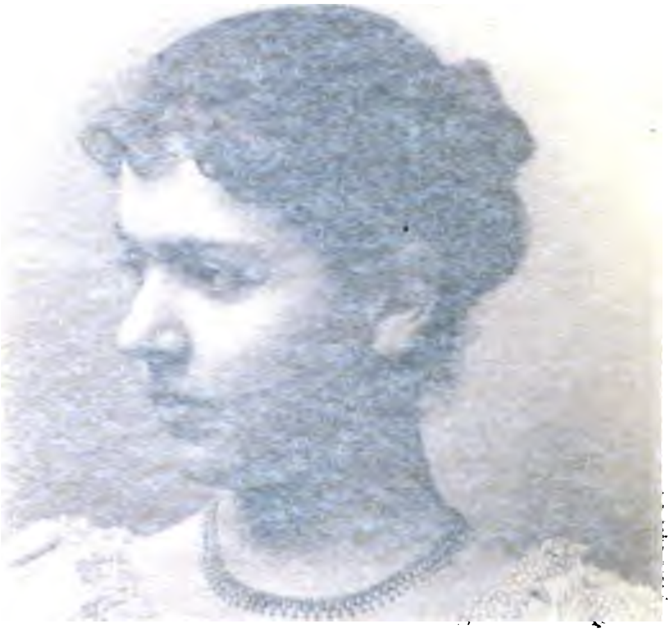

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E. BIERSTADT, N. Y.

THE AMERICAN
AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., JUNE, 1890. No. 6.

Our Illustration.

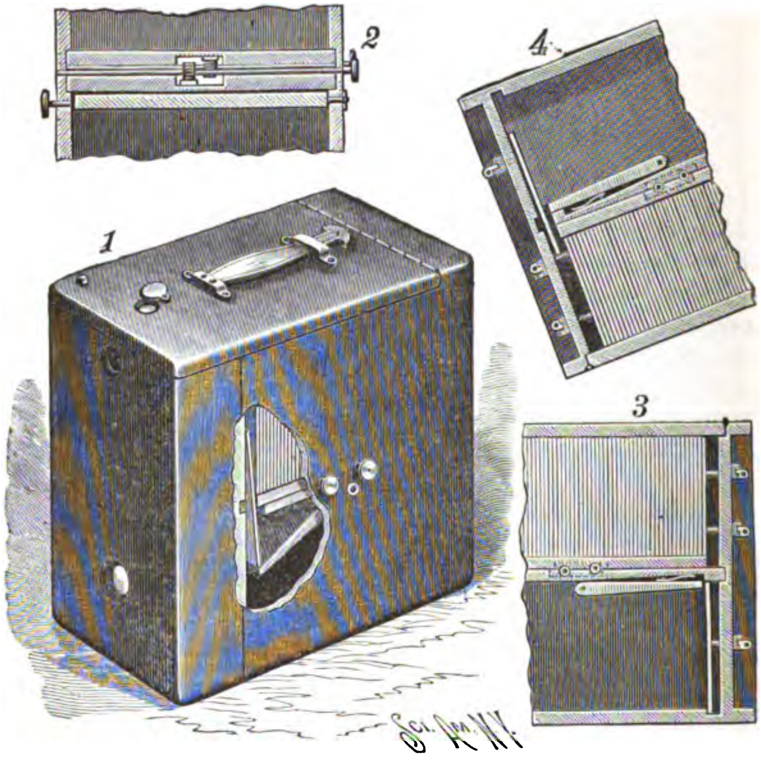
THE excellent specimen of a portrait study, "Greek Girl," which we have the pleasure of presenting in this number, illustrates what may be done by careful and judicious lighting and manipulation. Miss Barnes states that the negative was made in her attic studio, which we illustrated a short time ago, using a 3 B. Dallmeyer lens in the camera and giving an exposure of three seconds. The plate (a Stanley) was developed with pyro and carbonate of soda, and has been admirably reproduced by Mr. E. Bierstadt. The negative is rich, soft, and crisp, and is one of the best Miss Barnes has ever made. We trust that this example may be the means of leading others to experiment in artistic portraiture. Miss Barnes made a slide recently from this negative for the Slide Interchange.

◆

A New Magazine Hand Camera.

MR. WILLIAM A. BRICE, a London amateur photographer, has lately gotten up and patented a camera that will compete with the rollable film in the number of plates it is intended to hold. Through the kindness of the *Scientific American* we herewith present the illustrations which clearly show its principle. There is a turn-over detective camera made in Chicago that we believe is operated on a similar principle.

The camera is in the form of a box having upper and lower compartments, as in Figs. 1 and 3. The lens and exposing chamber are in the lower compartment, while the upper one holds the stock of plates (as many as three and a half dozen, if desired). The division between the two compartments is composed of two sliding boards, one above the other, which move in opposite directions and are propelled by pinions on shafts extending across the camera, as shown in Figs. 2 and 3, with their milled heads on the outside, as in Fig. 2. The division boards enter into grooves at each end of the camera, and thus effectually prevent the light in the exposing chamber from striking the stock of plates above. These plates are kept pushed forward in position by two spring pins, as shown in the right of Fig. 3. The heads of the pins are hook-shaped, and when drawn outward with the fingers and turned to one side, are held by a cam projection in that position, leaving a space behind the plates in which another plate may be inserted. A single spring pin is shown in the lower compartment, Fig. 3.



Pivoted under the center of the lower division board is a leaf-shaped board, the shaft of which projects through the opposite side of the camera box, as observed in Fig. 2. The board is seen in Fig. 1, partly down. Supposing it is desired to bring a plate into position to be exposed, the leaf board is put into the position shown in Fig. 1, then the upper division board holding all the plates is moved backward by rotating the milled head of the shaft outside, which allows the first plate to fall upon the edge of the leaf board as in Fig. 1, guiding it in its fall so that the lower edge will strike the front corner of the bottom of the lower compartment, and lie at an angle opposite to that shown. As soon as it has dropped, the sliding division board is pushed back to its original position and the camera is turned with the lens side upward. The back of the plate now rests upon the leaf board, and as the latter is rotated backward or downward, the plate follows it until it lies flat against the back of the exposing chamber; the leaf board is shown up in position after the movement in Fig. 3. The bottom edge of the plate enters a transverse groove in the bottom of the chamber, while the top is clamped by the leaf board, being held out of its recess in the lower division slide by a small flat spring. Before the plate dropped to this position, the single spring pin was withdrawn. Afterward it was released, which pushed the plate forward into the focal vertical plane. The camera is now placed in its normal position and the exposure made. After exposure the camera is reversed from the position shown in Fig. 1, and like that in Fig. 4, the spring pin back of the single plate is withdrawn, then the bottom division board is pushed forward by its shaft from the outside, which allows the exposed plate to drop into the magazine compartment, as shown, and by withdrawing the spring pins respectively, to gradually slide in behind unexposed plates. The lower division slide is pushed back, and the spring pins released, which keep the mass of plates compact and in position. Thus each plate may be passed around from one compartment to the other until all are exposed. Suitable means are provided for keeping tally of the number of plates exposed and also for protecting the lens while setting the shutter. The camera has the usual finder in the top, as shown. The lens may be provided with a rack and pinion movement for varying the focus, but as at present designed a fixed focus is preferred. There is a hinged top lid for opening the camera in the dark-room, for removing the exposed and inserting the fresh plates. All the movements are simple, and there is little opportunity for it to get out of order.

Lantern Slides by the Wet Collodion Process.

By Dr. W. C. Borden, U. S. Army.

THE worker in photography who is conversant only with dry plates is apt to look askance at wet-plate methods. The pages of matter devoted, in the wet-plate manuals, to descriptions of methods of manipulation, followed by still more numerous pages descriptive of failures and methods of rectifying them, are probably largely to be blamed for this state of things. The apparent difficulties are, however, greater than the real, as upon trial the manipulations will be found to be comparatively simple; and if ordinary chemical care is used, the pages devoted to "failures and their remedies" will never have to be referred to. In fact, for lantern slide making the wet collodion process is nearly as easy, is cheaper, and (the dry plate advertiser to the contrary notwithstanding) better in results than the dry-plate method. In wet-plate slides the high lights are clearer, the shadows more transparent, and the gradation and delicacy of detail superior. The apparatus required for wet-plate lantern-slide work is not great in quantity nor is it expensive,—a bath-holder, a dipper, a glass funnel, and a few bottles being all that is necessary outside the usual apparatus for dry-plate work. The bath-holder, which should be at least five inches wide and six inches deep, can be purchased of any photographic stock house, or may be made, as mine was, of dry pine nailed together and rendered impervious to the silver solution, which it is to contain, by driving melted paraffine into the wood with a red-hot iron. The dipper, which must be of silver or glass, may also be purchased, or made by bending the ends of two small glass tubes into a hook shape, and then fastening the other ends into a wooden handle. For collodion bottles two six-ounce, glass-stoppered bottles will answer as well as the more expensive ones specially made and sold for the purpose. In addition to these working articles, a few chemicals (what particular ones will be indicated further on in the formulas), and the requisite quantity of good flat lantern-slide glass will be necessary. As to the practical work, after considerable experience with different methods and formulas, the following has seemed to me the best method for wet-plate slides.

CLEANING THE GLASS.

Before applying the collodion the glass plates must be cleaned, and to this end new plates, plates spoiled in manipulation, and rejected gelatine lantern-slide plates should be placed in the following fluid:

Potassium bichromate, ...	2 ounces.
Sulphuric acid, ...	1 ounce.
Water, ...	1 pint.

Contained in a large porcelain or earthen-ware dish—a large dinner-plate will do—to remain over night. The plates are then taken out, rinsed in clear water, and wiped dry, when all grease, collodion, or gelatine will be found to be removed, leaving the glass perfectly clean and ready for use. This is the easiest and most satisfactory method of cleaning glass which I have found, and is also the method which I use for cleaning rejected balsam mounts in microscopical work. The cleaning fluid may be used repeatedly.

EDGING THE PLATES.

In order to prevent the collodion from leaving the plate during the manipulations following collodionizing, either a substratum or edging must be applied to the glass. Of the two I have found an edging of a solution of rubber more easily applied than a substratum of albumen, and equally effectual. The solution is made by dissolving pure rubber gum, such as is sold by the Eastman Company for use with their stripping films, or even artists' rubbers, in benzine. A narrow edging of this is applied, by means of a camel-hair brush, to the edge of the surface of the plate to be collodionized. It dries almost instantly, when the collodion may be flowed on the plate.

COLLODIONIZING.

The following formula gives a collodion having good keeping qualities, and producing a fine deposit. For positives it is all that can be desired.

Ether,	3 ounces.
Alcohol,	3 ounces.
Gun-cotton,	30 grains.
Ammonium iodide,	30 grains.
Cadmium bromide,	6 grains.
Potassium bromide,	6 grains.

Put the alcohol in a bottle and add the iodide. Dissolve the bromides in a few drops of water, add to the above, and filter; then add the ether, and lastly the gun-cotton. Filter again before using. The collodion should be made a week before it is to be used; though if there is some old collodion on hand, the new may be used the next day after making, by adding to it an equal volume of the old. At the time of using, it is well to filter about one-half of the week-old collodion into a glass-stoppered bottle, adding from the stock as the collodion is used up. All filtering should be through absorbent cotton.

The plate having been edged with rubber solution and being ready for collodionizing, it is held by the corner between the thumb and finger, and a pool of collodion poured upon it from the bottle. The plate is tilted slightly, so that the collodion flows over its entire surface, and the excess of collodion is then poured off from the lower corner next the hand, into a second glass-stoppered bottle. While the collodion is flowing off, the plate should be tilted back and forth in the direction of its plane, or otherwise the collodion will set in ridges and give unequal densities. The collodion which accumulates in the second bottle can be re-filtered and again used, a little alcohol and ether being added, if necessary, to make up for evaporation, and to keep it sufficiently fluid.

SENSITIZING.

The plate having been collodionized and the collodion having set so that it is tacky to the touch, it is ready to be immersed in the bath, which is made according to the following formula:

Silver nitrate,	1½ ounces.
Distilled water,	18 ounces.

Dissolve the nitrate of silver in the water, and add to the solution two grains of potassium iodide dissolved in a few drops of water; then filter, and add c. p. nitric acid drop by drop until, on testing, blue litmus paper is slowly turned red. This bath solution should be frequently sunned and filtered,—the former to precipitate any organic matter which may get in the solution, and the latter to remove the precipitate, together with any particles of dust or other matter which would otherwise adhere to the collodionized plate to its detriment. The collodionized plate should, by means of a silver or glass dipper, be immersed in the bath, the motion of immersion being a single unhesitating one, in order that streaks on the film may be avoided. After the plate has been in the bath about a minute it is gently moved up and down until all greasy lines disappear, when it is left quiet for another minute and is then taken out, and after wiping the back and lower edge, is placed in the holder, care being taken to have the same edge up which was so in the bath, so that the silver solution may not run back across the plate.

In my work I have never used a regular wet-plate holder, but instead have used an ordinary dry-plate holder with a kit for holding the small plate. The kit is so made (by myself) that nothing but wood and silver wire touch the plate. By wiping the back of the plate, and placing a small strip of blotting paper under its lower edge to catch the dripping silver solution, I have had no trouble in using the dry-plate holder, and have found no necessity for purchasing a special holder for wet plates. It would, however, probably be better to have one, especially if much work was to be done. Any of the manufacturers can supply wet-plate holders, for any standard camera, having the same focus as the dry-plate holders usually furnished with them.

EXPOSURE.

For making the exposure a regular copying camera is the best, though an apparatus, not so convenient but which will answer every purpose, can be made by placing an ordinary view or portrait camera at one end of a box, and fastening the negative at the other with a ground glass back of it to diffuse the light. No light should enter the front of the box except that which comes through the negative. The apparatus should be pointed toward the north, preferably from an upper window, where a clear sky view is obtained. If this is not practicable, a reflector of white paper set in front of the negative at an angle of forty-five degrees, as in the Eastman enlarging apparatus, may be used. The object is to obtain an equal distribution of light over the negative. The lens used should be of the rectilinear type and preferably of about six inches focus, as this will admit of copying full size, or even of enlarging provided the camera has sufficient length of bellows, or a front extension. The time of exposure can only be learned by experience, as with dry plates, and will vary with the density of the negative, the quality of the light, and the rapidity with which the collodion is working. Collodion works slower with age, but a little experience or a trial exposure will give the guide for this.

DEVELOPMENT.

After a thorough experience with iron and pyrogallic acid as developers, I determined to try hydroquinone. I was led to this from certain good qualities which it possesses as a developer for dry plates, and thought that perhaps its drawbacks might not appear when used for wet collodion. I therefore gave it a thorough trial, and after careful comparison of slides developed with it and those developed with iron or pyro, I am satisfied that it is the best developer for this work. The formula for use is as follows:

Water,	5 ounces.
Citric acid,	30 grains.
Acetic acid,	1 dram.
Alcohol,	1 dram.
Nitric Acid,	3 drops.
Hydroquinone,	30 grains.

Mix in the order named. The water should preferably be distilled and boiled. The solution keeps well. After exposure the plate is taken from the holder, in the dark-room, and held by the corner between the thumb and finger of the left hand, while with the right the developer is quickly poured on the plate so as to cover its entire surface. The plate is then gently tilted back and forth so that the developer will work evenly over its surface. If desired the plate may be developed in a tray, using only sufficient developer to cover it, though I prefer the first method. If the exposure was correct the development will be rather slow, the positive building up clearly and with good detail. Watch carefully and stop the development before the high lights show any tendency to veil. Wet plates can be manipulated in considerable more light than ordinary dry plates, hence the development can be more easily and certainly watched. The plates do not fix out, but instead appear more dense after fixing and drying than during development. When the development has been carried far enough, the plate should be rapidly washed under the tap, or with several changes of water, and then fixed in a solution of one ounce of sodium hyposulphite in four ounces of water, after which it must be thoroughly washed to remove the hypo. The positive may now be dried and mounted with mat and cover glass, or it may, if desired, be toned before drying.

TONING.

Chloride of gold,	15 grains.
Water,	15 ounces.

Dissolve, and for use neutralize or render slightly alkaline, one-fourth ounce of the solution by gradually adding a saturated solution of sodium bicarbonate in water, testing with red litmus paper, then add five ounces of water. The slides are placed in this, preferably before drying, and left until they turn the desired color. They are then washed and dried. Slides may also be toned with a weak solution of sulphuret of potassium, or with platinum chloride, but I believe the gold preferable.

INTENSIFYING.

Slides which are too thin and with clear high lights may be intensified, though with a good negative to work from it is better to make another exposure. With a very thin negative, lacking in contrast, an ordinary exposure and development will give a positive with the high lights fogged. When it is necessary to work from such a negative the positive should be underexposed, and the development should be stopped as soon as the details appear, and before the high lights begin to haze over. After fixing and washing, the positive will be found to be thin and full of detail, but with perfectly clear high lights. Intensification will now make a satisfactory slide, and of the different agents for this purpose the uranium intensifier is to be preferred. It is used in two solutions, as follows:

URANIUM SOLUTION.

Uranium nitrate,	20 grains.
Water (distilled),	4 ounces.

FERRICYANIDE SOLUTION.

Potassium ferricyanide,	40 grains.
Water,	4 ounces.

Flood the plate, held between the thumb and finger, with sufficient uranium solution to cover it nicely; let it act a moment, then pour back into the graduate and add a small quantity of the ferricyanide solution. Pour the mixed solutions over the plate, and if sufficient density is not obtained add more of the solution of ferricyanide. Rinse thoroughly,—*prolonged* washing will reduce the density, and dry.

REDUCTION.

Reduction has sometimes to be resorted to, and to effect this, a few drops of tincture of chloride of iron, as sold by druggists, are added to three ounces of water, and the mixture flowed over the plate. The flooding should be done quickly, and the plate rocked in order that the reducer may act evenly. The plate is then washed thoroughly and afterward immersed in a solution of hyposulphite of soda, when the reduced silver will be removed. If sufficient reduction is not obtained the process may be repeated. Where slides have to be made from particularly poor negatives, a combination of reduction and subsequent intensification will often give satisfactory results, though with ordinarily good negatives methods of "doctoring" should never be resorted to, as better results can be obtained by proper exposure. These methods should be reserved for work from inferior negatives where proper exposure can not be given, and under or over-exposure has to be resorted to in order to produce the desired result, though it must be borne in mind that good slides may be obtained by the wet collodion process from negatives so thin as to defy the dry plate, and this, too, without either intensification or reduction. When once adopted, the ease with which wet-plate manipulations can be gone through with will be a revelation to the beginner, and the results obtained will more than repay the slight trouble of learning. The wet collodion process can be worked to advantage with dry-plate lantern slide work, as the plates spoiled in the latter can be cleaned and utilized in the former.

The extra number of bottles and the quantity of apparatus required is not large, and the operator can go from dry to wet-plate work without inconvenience. I venture to say, however, that with wet-plate work once under way, dry plates will be abandoned, except, perhaps, when needed for some special purpose.

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The St. Louis Camera Club.

BY ROBERT E. M. BAIN.

THE St. Louis Camera Club, which was the first society to possess a club-house of its own, was organized in November of 1885. The meeting was held in the parlors of the Lindell Hotel as the result of a call issued by a number of prominent amateurs. The object stated in the call was for the formation of a society to exchange ideas on photography for the mutual benefit of the members. Some twenty gentlemen were present and a committee was instructed to draft a constitution and by-laws. At a meeting held a week later the constitution proposed, with some amendments, was adopted, and at the same meeting officers were elected. They were Robert E. M. Bain, President; J. A. Howard, Secretary; J. F. Weston, J. C. Achterman, W. H. Wilcox, Executive Committee.

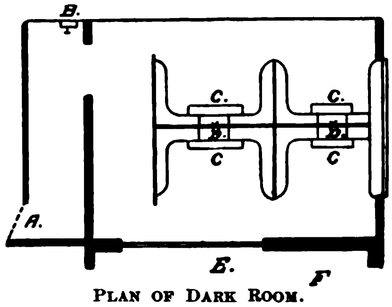
THE MEETING ROOM.

For a long time things progressed but slowly. New members were hard to obtain, owing to the lack of rooms and facilities for work. Finally, one year later, a room was rented in the Chamber of Commerce building, and a dark-room added. This was quite a step forward and was the means of adding several new names to the roll. A few months later, the St. Louis University, through Rev. C. M. Charropin, S.J., a member of the club, proposed that the club take up its residence in their finely situated college building, offering a quarter's rent free, including the use of the large lecture hall, capable of seating eighteen hundred persons, and also a dark-room. This very generous offer was at once accepted, and from that time until June, 1889, the club met regularly at the college quarters. A year and a half later the college moved to its new location on Grand Avenue, West Pine Street and Lindell Boulevard. In this magnificent building the club had a meeting-room, 85 x 40 feet, the use of a laboratory of the same size, containing a dark-room and every accessory necessary to the use and convenience of the members.

THE LIBRARY.

At the meeting in June last, a committee of the members reported to the club that there was a general feeling among the more prominent members that the club should seek permanent quarters of its own, thus relieving the college of the charge it had so generously assumed. A committee was then appointed to seek a suitable location and report to the president. This was done, and the premises now occupied were leased for a term of years, and the house committee instructed to at once introduce such improvements as were necessary for the convenience and comfort of the members. The first illustration shows the meeting room. This is so arranged that the hall can be, if necessary, divided into two rooms by means of a folding partition. The screen for lantern-slide projections will be noticed rolled up against the ceiling near the front entrance. This position was adopted in order that the screen might be permanently located and not have to be changed whenever it was necessary to reduce the size of the hall. This hall is 65 x 30 feet, and contains benches and chairs sufficient to seat, comfortably, two hundred persons. The chemical case will be noticed on the right of the main entrance, next to which is the entrance to the library, a corner of which is shown in the second illustration. To the left of the main entrance will be seen the entrance to the dark-room. This entrance contains no doors, but the openings are so arranged that no light ever reaches the dark-room by this means. The dark-room was arranged by the president of the club on Mr. F. C. Beach's idea, and the accompanying diagram shows the general arrangement.

The room contains four stalls, on Mr. Beach's plan, and each stall is entirely independent, containing its own complete apparatus. The light used is the fifty-volt incandescent, and the lamp is so arranged that white, yellow, or red, or a combination of either, can be had if desired. The switch, connected with the main hall, controls all the lights except those of the library and dark-room, so that the main hall



PLAN OF DARK ROOM.

A, entrance from main hall. B, electric light switch to main hall. C, sinks. D, electric lights. E, sliding doors. F, vestibule.

can be fully illuminated or placed in utter darkness at a moment's notice. This is very convenient for all lantern exhibitions.

The club-house is situated in the midst of a lot measuring three hundred feet on Locust Street, by one hundred and thirty-five feet on Twenty-Third Street. This ground is fenced in, and will doubtless be rolled and a portion arranged for several lawn-tennis courts, as soon as the weather settles.

The club membership includes the names of ninety amateurs, four of whom were elected at the last meeting. Meetings are held the first and third Tuesday in each month; the first meeting being devoted to business, the second to the reading of papers prepared by the members, demonstrations, and the exhibitions of lantern slides. A committee has been appointed to arrange for the annual field day which will occur the first week in June. The club has been a member of the Lantern Slide Interchange since its inception.

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WOMAN'S WORK.

EDITED BY MISS CATHERINE WEED BARNES.

The Lighting in Photographic Studios.

THIS pamphlet, by Mr. P. C. Duchochois has been already noticed in several of the leading photographic magazines, but I wish to make it the text for a short article. As long as human nature retains its present characteristics, there will be more than one way of looking at a subject, especially by a camerist. We can all, however, meet on the broad and level field of free discussion, and, as one who takes a great and increasing interest in studio-work, it seems to me that everything tending to enlarge its possibilities, is of value. A book, such as the above, should prove an effective aid towards certain progress, as it points out many errors to be avoided and rules to be followed. While differing from the author on some points, I feel, in the main, that the camerists who pursue their labors under the skylight, owe him their thanks for his suggestions so concisely and clearly expressed.

In the first chapter, his rules for posing, are, however, decidedly too positive and rigid to be implicitly followed. They oblige one to draw a distinction between a "portrait and a "picture," to the manifest disadvantage of the former, while his claim that "animated scenes" belong to the painter, not the photographer, is one to which I must take exception. Not that it is an easy thing to compose a picture of a group or single figure under the best of circumstances, but the training gained in a painter's studio ought to be of immense help to a photographer. The latter works under certain disadvantages which the former does not meet, but he has counterbalancing advantages and need not, in becoming a camerist, forget anything he has previously learned.

Emphatically is this true in the attempts now being made to utilize photography as a means of book illustration. It would be exceedingly wearisome to turn over page after page only to meet the usual portrait effects of the ordinary studio. There is an increasing demand for *action* in pictures, and the progressive photographer must furnish it or go to the wall. While Mr. Duchochois is right in his remarks on the difficulty of retaining a certain expression on the sitter's face, he gives too much importance to a quick exposure, for, with a group, and even with a single figure, it is often fatal. With many faces it is absolutely necessary to over-time in order to prevent extra work for the retoucher, and when the sitter poses easily and naturally, I believe in not being in too great a hurry as to exposure. His suggestion would involve using a quick plate, and I am not in favor of them for portraits, except when absolutely necessary. The face, it seems to me, loses in delicacy and softness.

His exhortations to the student to cultivate originality, are timely, but I cannot agree with the inference he seems to draw that originality and technical excellence are a difficult combination. The one should not exclude the other, and the idea that it may do so, or can be allowed to do so, is apt to do infinite mischief with beginners. They should be encouraged, but it is not well to do so by ignoring difficulties, and, if technical excellence by itself is apt to form a stiff and artificial style, do not run to the opposite extreme and be willing to believe that artistic and original work consists largely of a violation of the rules of technique. I heard a sermon once that could be forcibly applied to rules in photography. It was on "How to keep good resolutions," and the strongest point the preacher made was the suggestion not to make too many.

The chapters on regulating the studio light should be read carefully and thoughtfully. In a painter's studio a student is taught at the very first that no pigment or combination of them can ever give the intense effect of light. The painter considers where the highest light in his picture shall be placed, with one or two skillful touches indicates the brightest effect he can produce, and then subordinates the rest of the picture to that spot. But he does it without sharply calling attention to any particular part. This is done in painting by gradation of color, but in photography it must be done by careful lighting, exposure, and development. The extraneous addition of color is too often used as a means of concealing imperfect drawing, while in photography no such disguise is possible. In speaking of the interior of the studio, the author selects a strange tint for the walls and curtains, "orange-green," and it would seem as if a soft gray was much better. On the south side of my own studio I often hang dark curtains to get certain effects, and, necessity being the mother of invention, must manage to take groups, etc., in a much shorter room than Mr. Duchochois deems necessary. I have spoken more than once of my W. A. Voigtländer group lens, and with it there is no need of distortion in a room fifteen to twenty feet shorter than the space he mentions. His arrangement of shades and curtains, where the former work half way upwards and half way downwards, and the latter overlap each other and are hung loosely on wires so as to be easily moved from below by a pole, is excellent. My own shades are white and my curtains black. His idea as to using a tinted head-screen is also good, and he is entirely right in saying that the backgrounds for interiors and landscapes are difficult to use advantageously and should only be used with the greatest care. Sitter and surroundings are very often utterly incongruous, and yet, what is a photographer to do when he is asked to mix up the costume of one century with the surroundings of another, and when it is needful for him to please the sitter, but his own good taste utterly forbids it. This is, however, assuming that every photographer is an artist, which, too often, he is not, and in this profession, as in so many others, the whole is judged by a part and that not the best part of those who pursue it. The suggestion as to placing a canopy over the lens, offers advantages which may, at times, prove exceedingly useful.

One cannot speak too highly of the recommendations which form the close of Mr. Duchochois' book. They should be committed to memory, especially what he says about experimenting every day on lighting the model, and the infinite possibilities involved in the development of the negative. The latter cannot be too thoroughly studied; every negative should be a lesson in development, for then and only then can the finest results be attained. The operator should do his own developing to fully understand how to expose a plate and, what is more, study his chemicals and combine them himself, when, if but little of a chemist to start with, he will gradually accumulate a fund of practical chemistry that would surprise a college professor clothed in all the knowledge of chemical signs and language. I wish to be understood as speaking especially to women, and let me urge upon them the pressing need of reading and assimilating such books as this of Mr. Duchochois. It cannot be too strongly impressed upon them that systematized work is required to accomplish the best results in every form of human endeavor. As in the kindred arts of music, painting, and sculpture, those only take high rank who are willing to sacrifice time and trouble to gain the desired result. In that treasury of the classics (the Latin language) one sentence comes down to us which should be graven deeply on every woman's mind until it becomes, unconsciously, a part of her life. "*Labor omnia vincit.*" She can work, she has inherent in her organization an almost infinite power of faithful labor, but she should learn to work understandingly and systematically, not allowing anything to take the place of well-ordered management. Inspiration is too often a "will-o'-the-wisp" to many camerists, but Pegasus should be obliged sometimes to do service in a light harness. Study, read, think, and practice carefully, remembering that great as is the inspiration of genius, still greater is the spirit of the grand motto, "*Labor omnia vincit.*"

THE
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EDITORIAL COMMENT.

Our Anniversary.—With this number we close our first year in the service of amateur photography. Twelve numbers of the magazine have been published and sent out to all quarters of the globe. A recent review of those numbers has convinced us that we have, to some extent at least, succeeded in realizing the aims we had in view in establishing the magazine. Those aims were not merely financial. There is small profit in publishing a magazine of the character and make-up of the AMERICAN AMATEUR PHOTOGRAPHER at its present subscription price. We had a higher aim than to put money in our purses, and that aim was to stimulate and elevate amateur photography in this country by publishing a magazine devoted especially to the interests of amateurs to whom it might be a trustworthy and entertaining guide in all that pertains to their favorite pastime. We have sought to make it comprehensive, reliable, and interesting, a bright and timely record of photographic means and ways, always seeking to bear in mind the fact that to the genuine amateur, photography is but a means to an end, the development of the sense of beauty, the putting one in touch with Nature and so, may we not say it without fear of seeming pietistical, with Nature's God. Something more than a mere record of photographic technicalities has been our thought and intent as we selected the monthly "copy." From the many kindly letters of appreciation and encouragement which we are constantly receiving, we are led to believe that our efforts have been measurably successful. Much of our higher thought and aim has failed of realization, but enough has been accomplished to attest the earnestness of our purpose, and our desire to give to amateurs a magazine which shall be not unworthy of the cause it seeks to represent. The experience of the past has given us knowledge for the future, and we begin our second year with full assurance of receiving from our friends the support we need to enable us to maintain the magazine at its present standard.

American Amateurs Honored Abroad.—One of the highest compliments which has ever been paid to the Photographic Society of Philadelphia was the winning by three of its members of three silver and one bronze medals by three of its members at the recent International Photographic Exhibition held at Newcastle-on-Tyne, under the auspices of the Newcastle and Northern Counties' Photographic Exhibition. Our English contemporaries speak of it as having been one of the best ever held in England. The exhibits numbered nearly one thousand, and among the exhibitors were such noted prize winners as F. M. Sutcliffe, W. W. Winter, Ralph Robinson, and H. P. Robinson. To win medals in such a goodly company as this is praise indeed, and proves that American amateurs are foemen worthy of the steel of the most noted foreign knights of the camera. Mr. C. R. Pancoast won the silver medal in the amateur competition for the best architectural work, his exhibit including an interior of the Moti Musjid at Akra, and two views of the Calcutta Exhibition of 1883. Mr. Robert S. Redfield won an extra silver medal in the genre class with his "Victuals and Drink," and the silver medal for the best set of lantern slides, in both cases in competition with some of the best professionals in England. Mr. John G. Bullock was awarded an extra bronze medal in the landscape competition for three views, "Moosehead Lake from Kineo," "On the Wawassett," and "Birch Trees at Kineo." We heartily congratulate the three gentlemen, the Philadelphia Society, and American amateurs on the success so bravely won.

A New Intensifier.—*Photographic Answers* gives the following method of intensification: Gelatine negatives, after a thorough washing, are soaked for five minutes in equal parts of ammonia and water, then washed thoroughly and immersed in an alcoholic solution of cadmium bromide, one part of the latter to 1.000 of spirit. The negative becomes an intense black—the intensity of which is governed by the duration of the preliminary soaking in ammonia.

A New Fixing Salt.—According to *Photographic Answers* magnesium chloride is a valuable fixing agent for gelatine and albumen papers. Among its advantages are: no loss of tone or details, and the ease with which it can be eliminated, a slight washing being sufficient to remove the last traces. As it may be difficult for those who wish to try the salt to procure it, we append an easy method for its preparation: One ounce of strong hydro-chloric acid is diluted with three times the quantity of water, and 120 grains of heavy magnesia are added with constant stirring. The solution becomes hot, and some of the magnesia remains undissolved, which, after standing, with occasional stirring for an hour, is filtered out. The excess of magnesia insures the complete neutralization of the acid.

Hubert's Eikonogen Developer.—

Rain water, ...	300 parts.
Sulphite of soda, ...	50 parts.
Eikonogen, ...	10 parts.

The water should be warm and the salts dissolved in the order given in the formula; then add:

Carbonate of soda, ...	30 parts.

For extremely rapid exposures the undiluted developer is to be used. For shutter exposures of medium rapidity a sufficient quantity of the developer is diluted with half its bulk of water. For time exposures take equal parts of developer and water.—*Le Progres Photographique.*

Graham's Method of Converting Albumen Paper into Bromide Paper.—Ordinary albumen paper is sensitized as usual on the silver bath and dried. It is then floated for fifteen to twenty minutes on a weak bromide of potassium bath and dried. The strength of the bromide solution need not be greater than 1 to 300. This paper keeps well and is about as sensitive as gelatino-chloride paper. It is well adapted for enlargements, contact prints by artifical light, and for all other purposes where bromide paper is employed. It develops well with pyro, hydro, eiko, or ferrous sulphate.—*British Journal.*

Kibbler's Acetate of Lead Toning Bath.—Ordinary albumen prints are washed as usual, then placed in a weak acetate of soda bath until a warm tone is obtained. This bath should be extremely weak in gold, as the best effects are produced by slow toning. When removed from the bath, the prints are washed in several changes of water, and then placed in the following combined toning and fixing bath:

Acetate of lead (powdered), ...	15 grains.
Solution of hypo (1 to 10), ...	16 ounces.

Ten minutes in this bath will give the prints a rich black tone. The advantages of this method are said to be: the rapidity of the operations, economy in the use of the chloride of gold, and the fact that the prints lose nothing in fixing. But are the tones permanent? They are probably due to a partial sulphuration of the prints, and that fact at once makes their permanency a matter of doubt.

We are indebted to the Providence Camera Club for the beautifully gotten up invitation to the sixth annual exhibition, and regret that other engagements prevented us from attending as we had hoped to do. The exhibition was a notable success, and the club is to be congratulated for its successful work.

Cramer's New Pyro Developer.—

A.—Water,	1 ounce.
Carbonate of soda (crystals),	20 grains.
Sulphite of soda (crystals),	25 grains.
B.—Distilled water,	1 ounce.
Oxalic acid,	1 grain.
Sulphite of sodium (crystals),	10 grains.
Pyro,	80 grains.

Normal Developer.—A, 1 ounce; B, 20 minims.

Eight grains of dry pyro may be substituted for one dram of solution B. When the developer is new two to five drops of a one to ten bromide solution should be added, or old and new solutions may be mixed together. If the solution works with too great intensity, it should be reduced with an equal amount of water, to obtain more detail. For over-exposed plates old developer should be used; for excessive over-exposure the old developer should be restrained with bromide. Under-exposures should be treated with the diluted developer in order to obtain more detail and less contrast. When the development is completed, throw off the developer, and without rinsing the negative, flood it with clean water and allow it to stand for some time before fixing.

The Harvard Eikonogen Developer.—

Water,	10 ounces.
Sulphite of soda,	2 drams.
Carbonate of potash,	2 drams.
Eikonogen,	60 grains.

This forms the normal developer, and it may be used repeatedly, adding fresh solution as needed. For under-exposures dilute with water.

Interstate League of Photographic Societies.—We are pleased to learn that Mr. George Bullock, of Cincinnati, is at work forming an interstate league of amateur photographic societies, with a view to holding a convention for organization. We believe that such a league would advance the best interest of amateur photography, a cause which we have much at heart, and we wish M. Bullock all success in his praiseworthy effort, which we shall at all times be pleased to aid to the best of our ability.

A New Developer.—Mr. James S. Stebbins, Jr., President of the Society of Amateurs of New York, is said to have discovered a new organic developer. Mr. Stebbins was the first to suggest the possibility of eikonogen long before it was used as a developer.

A New Transparent Film.—A Boston photographer is said to have invented a new transparent film, made by a chemical process, which will shortly be placed on the market.

Mrs. Jeannette M. Appleton, whose charming "Mid-Winter" was reproduced in our March issue, made the negatives which were used to illustrate the breezy article, "Along the North Shore in a Runabout," printed in the May number of the *New England Magazine.* Mrs. Appleton has recently made a photographic trip to Virginia to obtain illustrative matter.

Acid-Sodium Sulphite as a Preservative.—Sulphite of soda in conjunction with sulphuric acid has long been used as a preservative of solutions of pyro, eikonogen, etc. The preserving power of the combination is undoubtedly due to the sulphurous oxide gas formed. Several German writers have recently recommended the acid-sulphite of sodium both in the developing and in the fixing baths. The compound comes in the form of a greenish-yellow liquid smelling strongly of sulphurous oxide gas, with which it is saturated. It is said to contain fifty per cent. of the acid-sulphite, or about twice the amount of the sulphurous oxide usually found in ordinary sulphite of soda solution. Added to the fixing bath in the proportion of one ounce to each pint of the hypo solution, it prevents the bath from becoming discolored and makes stained negatives a rarity. The bath remains clear even after several negatives have been fixed in it. The only precaution necessary to be taken is to keep the bath distinctly acid by occasional additions of acid-sulphite. The negatives leave this modified bath with the pleasing color of ferrous-oxalate developed plates, with remarkable clearness in the shadows, and are fine printers. Added to stock solutions of pyro or eiko in the proportion of one drop of the acid for each grain of pyro or eiko, the effect is to add to the staying powers of the solutions and to promote cleanliness of action. The plates develop clean and bright. On the whole such experimental trials as we have been able to make of the new compound seem to demonstrate its value as an addition to the Materia Photographica.

Coating Bromide Paper.—On page 208 of our May number Mr. W. H. Gardner alludes to the fact that our Mr. F. C. Beach was one of the first to suggest that the manufacturers put a thinner coating on bromide paper for the purpose of increasing the facility of burnishing. Mr. Beach really never tried burnishing bromide paper in a burnishing machine to any extent but advised a more simple way, which is to squeegee the face of the bromide print on a sheet of hand-polished hard rubber, removing the surplus water from the back of the print with blotting paper. When it is dry the print is peeled off and has a high gloss equal to the surface of the rubber. When the paper is coated too thin the gloss cannot be perfectly obtained. The emulsion must contain enough gelatine to prevent the paper from striking through, otherwise when the surface of the print is looked at by reflected light numerous dull spots will be observed, showing the texture of the paper. It is claimed by the manufacturers that the smallest amount of gelatine that can be used will give the clearest whites, which is, in a measure, true; but as a matter of fact a large amount of gelatine must be on the paper to give a good gloss to the unmounted print, which, it will be seen, is contrary to the suggestion Mr. Gardner thought Mr. Beach made. Any one using this plan of giving a finish to bromide paper prints will readily understand that the appearance of dull spots will mean too thin a coating.

"*The Romance of Two Cameras*" is the title of a very cleverly drawn sketch based on photography, in the May *Century Magazine*, by Elizabeth W. Champney, wife of J. Wells Champney, the artist and amateur photographer. Its novel point of interest is the accidental exchange of two cameras unbeknown to each other of the two lovers; she develops films of his, seeing her own pictures caught unawares; and he, pictures she has exposed. Attending the Centennial Parades they become acquainted more intimately and all is serenely settled. Altogether it is one of the most interesting photographic sketches that has appeared for some time.

Photographic Exhibitions.—The matter of restricting the number of medals or diplomas to be awarded at photographic exhibitions has received considerable attention of late, so much so that a league of amateurs and professionals abroad is endeavoring to have the subject officially recognized. A distinguished English amateur, who has taken several medals, writes that he hopes in the coming Joint Exhibition, to be held in New York in 1891, the number of diplomas will not exceed a dozen or fifteen. Continuing, he says: "The evils of the trade system of multiplication of awards have been very glaring here. Men are only now seeing that photography in these matters devides itself sharply into Art and Science. There should be *two distinct sections*—Art, Science. In the Science there may be as many divisions as may be required, but in the Art absolutely no classification whatever, just as at the Royal Academy and at the Pall Mall Exhibition, the only *worthy* exhibition we have. The judges, if they know their art, do not try to compare portraiture and landscapes. They give their award where they find artistic merit—*good* art, and six awards are generally enough to distinguish all that is worthy." The question naturally arises what subjects come under the Science section; when that is settled the rest will be easily ascertained. We commend the foregoing remarks to all interested in photographic exhibitions.

The Disadvantages of the Rollable Film for Architectural Work.—We have had occasion to use considerable of the rollable celluloid films in photographing fronts of city residences, using a wide angle lens, having the camera fixed perfectly level. We developed the negatives with eikonogen with complete success, ample density and detail. Examining them closely we observed the horizontal lintels, for example, under a few of the windows in the upper portions of the building had a wavy or curved appearance, which we were certain were not in the original. The only way of accounting for it was the fact that the film of this large size, 8 x 10, could not be made to lie flat on the stage or backing. The strong tension on the supply spool seemed to draw it in such a way that when the film was fully stretched, one or two puckers would appear diagonally across the surface raised nearly one-quarter of an inch, rubbing perhaps on the under side of the exposing slide. Here was a wrinkle or a curved surface for the image to strike on. It was not until development occurred and the film was perfectly flat that the distortion was noticed. The celluloid film is naturally so smooth that we think it is unnecessary to subject it to the strain which is now used. For large sizes some other method of making the films lie smooth should be adopted, either to have an adjustable stage to be pushed forward by springs, so as to push the film outward evenly up to a focusing plane, or to press it against a thin glass surface, printing frame fashion, and photograph through that; the pressing against the glass to be done automatically similar to Dr. Just's automatic exposing machine.

New Device for Puncturing Celluloid Films.—On the roll holder for rollable films the automatic pin intended to puncture the division mark between the pictures sometimes fails to make any impression on the edge of the film. As it shoots out from the roller it simply presses the film outward without going through. The film, being tough, hard, and smooth, is therefore not affected or marked in any way. We simply affixed a delicate flat forked spring to the edge of the box, so that when the platform portion, with the guide rolls, etc., was adjusted the spring would press downward on the marking guide roll, requiring the pin as it shot out to pass through the film between the forks of the spring. The spring in fact kept the edge of the film tightly pressed against the roller. Since this change has been made the film is certainly punched each time it is rolled off, and no guess work is required to tell where it shall be cut.

H. P. Robinson's Pictures at the Boston Camera Club.—We recently had the pleasure of viewing a complete collection of Mr. Robinson's work at the rooms of the Boston Camera Club. All of Mr. Robinson's better known prints were included in the exhibition, which thus afforded an opportunity of judging of the merits or demerits of his *technique.* There is very much to praise in Mr. Robinson's work; the skill in posing, lighting, and composition is admirable, and the collection is far and away above the average, but we may be pardoned for saying that, in our opinion, the recurrence of the same model gives an air of monotony to the prints, and there seems to be an over fondness for a single method of arrangement. To us the collection, while of much artistic and technical merit, seemed to lack nerve, and to be characterized by too much of sameness.

INDEX RERUM PHOTOGRAPHIC.

INTRODUCTION.

The genesis of the following papers was as follows: Soon after I became interested in Photography, it became evident that if even a modicum of success was to be obtained, hard study was required The dry plate had been but recently introduced, and books were few and hard to obtain A habit was formed to note down any hint, new process or formula that might be given in conversation or at meetings of societies. Books purchased or borrowed were carefully read and notes taken. If the subject was too long to copy in full, the title was given and reference where to be found was made. But as the notes increased rapidly, it was found necessary for convenience to index them under their appropriate letter. Such has continued to be my practice to the present time. No one who has not pursued a similar course can form any idea of the amount of time saved by it. It is not intended that these papers shall be considered a complete dictionary of the science of Photography, neither can they aspire to the dignity of an encyclopædia, but they are what they are intended to be, a handy index to photographic things, offered to the amateur in a kindly spirit, hoping that by the perusal of them at least one small difficulty may be removed in his pursuit of a science, the possibilities of which are but dimly seen as yet, and in the hope that by them he may be induced to become a zealous worker in the art.

JOHN H. JANEWAY, M.D., U. S. A.

INDEX RERUM PHOTOGRAPHIC.

Aberration—Lat. *aberrare*, to "wander," to "stray." The convergence to different foci by a lens or mirror of rays of light emanating from one and the same point, or the deviation of such rays from a single focus. *Chromatic aberration*, due to the different refrangibilities of the colored rays of the spectrum, those of each color having a distinct focus. *Spherical aberration*, due to the spherical form of the lens, such form giving different foci for central and marginal rays. (See chromatic and spherical aberrations.)

Accelerators—Substances used to hasten development and utilize the smallest exposure possible. Hypo, common salt and corrosive sublimate have been recommended for and used with the ferrous oxalate developer. The alkalies are regarded as accelerators with pyro, hydrochinon and eikonogen, especially the hydroxides or caustic alkalies of potash and soda. A few drops of a strong solution of hypo is said to bring up the image very rapidly. Care should be exercised as to the amount.

Accessories—Things that enter into a work of art as mere ornamental parts, without being absolutely necessary. Great blunders are oftentimes made by incongruous choice of these. General effect and harmony should always be sought after, and profusion never resorted to.

Accidents—Their uses. It is said that one of the greatest arts is to be able to see our mistakes, and to know how to correct them. To accidents we owe a great deal of our knowledge, not only in photography, but in all the arts and sciences. The accidental presence of mercury in his closet enabled Daguerre to permanently fix the image on his polished plate of silver. Many photographers may have a definite idea of what they are going to do when they begin, but if they are wise, they will always be on the alert to seize every accident that may improve the picture. Therefore, learn to see the accidents, ponder over them, and take advantage of them as they occur.

Acetates—Salts formed by the union of acetic acid and a base. Normal acetates, acid acetates, and basic acetates. Being a monobasic acid, it cannot form any acid salts so called, that is, by a replacement of a part of its typic hydrogen, but the normal acetates of the alkali metals can take up a molecule of acetic acid just as they take up water of crystallization, forming an acid acetate. Basic acetate formed by the union of a molecule of a normal acetate with a molecule of a metallic oxide or hydrate.

ACHROMATIC—When applied to lenses, means that, by combining lenses of different substances of unequal dispersive powers, the curvatures of which are suitably combined, white light may be refracted without being dispersed. Images of objects viewed through such lenses do not appear colored. Achromatic lenses are made of two lenses of unequal dispersive materials; one, "A," of flint glass, is a diverging concavo-convex, the other, "B," of crown glass, is double convex, and one of its faces may exactly coincide with the concave face of the first; or, by inclosing a flint meniscus between two concavo-convex lenses. In either case the curvatures must be such as to combine the blue and orange rays.

ACHROMATISM—A term applied to the refraction of light without decomposition. (See decomposition of light.)

ACIDS—Compounds of hydrogen containing the elements of an acid oxide and water (hydrogen oxide), distinguished as acids because many of them possess in an eminent degree the property to which the term acid is generally applied, such as sour taste, corrosive action, solubility in water, and the power of reddening certain blue vegetable colors. A characteristic property of these acids, or hydrogen salts, is their power of exchanging their hydrogen for a metal presented to them in a free state or in the form of oxide. Formerly it was supposed that all acids contained oxygen, that element being regarded as the acidifying principle, but at present there are many acids known which possess all the characters of an acid, yet do not contain oxygen, viz., hydrochloric acid, also known as muriatic, composed of hydrogen and chlorine; bromine, iodine, and fluorine also combine with hydrogen and form acid compounds analogous in every respect to hydrochloric acid.

ACIDS USED IN PHOTOGRAPHY, EITHER DIRECTLY OR FORMING SALTS.

ACID, ACETIC—$C_2 H_4 O_2 = 60$—is found in small quantities in the juices of plants and in animal fluids. Prepared in various ways, generally by the slow oxidation of alcohol, or by destructive distillation of dry, hard woods, as oak and beech, at red heat. The strongest acetic acid, glacial (ice-like), is prepared by distilling finely powdered anhydrous sodium acetate with three times its weight of strong sulphuric acid, and purified by rectification to free it from sodium sulphate, and then exposed to low temperature. Crystals of pure $C_2 H_4 O_2$ then form in large quantities. Drained from the weak fluid portion and suffered to melt, above $15{\cdot}5^{\circ}$ C. ($59{\cdot}9^{\circ}$ F.), these crystals fuse to a thin colorless liquid; exceedingly pungent and well known odor. It is corrosive, raising blisters on the skin. It is miscible in all proportions with water, alcohol, and ether. Dissolves camphor and several resins. Contains 99 per cent. of acid and 1 per cent. of water.

Acid, Acetic—Generally prepared by mixing one part of glacial with two parts of water. Contains about 33 per cent. of strong acid.

Acid, Acetic Dilute—For photographic uses should be prepared by mixing one part of the glacial with seven parts of distilled water. In the shops, it is generally prepared by redistilling vinegar, and contains from 5 to 15 per cent. of acid, in which case it almost always contains copper or lead, and should therefore be carefully tested for these impurities. The other impurities found even in the so-called pure acid are traces of aldehyde, acetyle, hydrochloric and sulphuric acids; the former acid can be detected by adding a little of the acid to a solution of nitrate of silver; the mixture should remain clear after standing some hours. Free sulphuric acid can be detected by mixing with the acid a little powdered starch; boil, cool, and add potassium iodide. A blue coloration indicates an absence of free sulphuric acid; no blue coloration shows its presence by converting the starch into glucose. The strength of any sample of acetic acid cannot be safely inferred from its density, but it is easily determined by observing the quantity of dry sodium carbonate necessary to saturate a known weight of the liquid. Acetic acid is used for the formation of the salts known as acetates, in the developer for collodion plates, and in clearing baths for bromide prints, etc.

ACID, AZOATE—Name nearly obsolete. (See nitric acid.)

ACID, CARBOLIC—Phenic acid, phenol, coal tar—$C_6H_5OH = 94$. Most frequently produced by the dry distillation of coal, and purified by careful redistillation. Pure phenol crystallizes in long, colorless, prismatic needles, having a spec. gr. of 1·066. Melts at 40°–41° C. (104°–105° F.) When exposed to the air it turns reddish, in a solution and in contact with moist air deliquesces to a brown liquid. It has a penetrating odor, strong burning taste, and attacks the skin of the lips. When applied to the outer skin, it produces anæsthesia. It exerts a strong antiseptic action, and is added to albumen and certain mountants as a preservative.

ACID, CARBONIC, GAS—$CO_2 = 44$—This compound is always formed when charcoal or any other form of carbon burns in air or oxygen. Most commonly formed by decomposing a carbonate with one of the stronger acids. It is fatal to man and animals when confined in it. Forms with bases those important salts known as carbonates.

ACID, CHROMIC—$Cr O_3 H_2 O$.—Chromic Trioxide—$Cr O_3$—combines with water and forms chromic acid. This acid is bibasic and analogous in composition to sulphuric acid; its salts are isomorphous with the corresponding sulphates.

ACID, CITRIC--$C_6 H_8 O_7 + H_2 O = 210$—Obtained in large quantities from the juice of lemons and other fruits, as in limes, gooseberries, currants, etc., in conjunction with malic acid. It crystallizes in two different forms when from cold saturated or hot solution. It has a pure and agreeable taste and dissolves with great ease in both hot and cold water. The solution strongly reddens litmus, and when kept long is subject to spontaneous change. When heated with sulphuric or nitric acid it is entirely decomposed, the latter converting it into oxalic acid. Caustic potash at a high temperature converts it into both acetic and oxalic acids. It is sometimes adulterated with tartaric acid. Detected by dissolving the acid in a little cold water and adding a small quantity of potassium acetate. If tartaric acid is present, a white crystalline precipitate of cream of tartar will be produced by agitation.

ACID, FORMIC—$C H_2 O_2 = 46$—Occurs in the concentrated state in the bodies of ants, hairs and other parts of certain caterpillars, and in stinging nettles. Prepared by the oxidation of sugar, starch, gum, and organic substances in general. The best mode of preparation, however, is by heating oxalic acid in contact with glycerine (concentrated). Concentrated formic acid is extremely corrosive to the skin, and produces blisters and ulcers difficult to heal. It has been recommended, diluted, as a preservative of pyro. Being a powerful reducing agent if itself undiluted, it has an advantage when diluted over other preservatives of assisting development.

ACID, GALLIC—$C_7 H_6 O_5 = 170$—Occurs in nut galls, sumach, tea, and many other plants Used in the preparation of pyrogallol; in some of the old collodion processes in changing the tone and color of blue prints, etc An aqueous solution reduces the metals from solutions of gold and silver salts.

ACID, HYDROBROMIC—HBr 81—Colorless, pungent acid taste and reaction. Prepared by passing sulphureted hydrogen through bromine water, or by decomposing bromide of potassium with tartaric acid. The salts termed bromides are used principally as restrainers, etc., in photography.

ACID, HYDROCHLORIC—$HCl = 36\frac{1}{2}$—Chlorohydric, muriatic acid--Easily prepared by heating in a flask or properly prepared furnace common salt and oil of vitriol—sulphuric acid diluted with a small quantity of water. It must be collected by displacement or over mercury. Is extremely soluble in water, that liquid taking up at the temperature of the air about 418 times its bulk. Mixtures of snow and the acid form very powerful and economical refrigerants, two parts of snow and one of acid lowering the temperature to 32°. Uses: the platinotype, clearing bath, and other processes, etc.

ACID, HYDROCYANIC—HCN or $HCy = 27$—Cyanogen unites (though not directly) with hydrogen and forms the very poisonous compound called hydrocyanic or prussic acid. With the metals forming compounds called cyanides, analogous in composition and character to the chlorides, iodides and bromides.

ACID, HYDROFLUORIC—$HF = 20$—Prepared by heating in a platinum or lead retort powdered fluorspar (calcium fluoride) with concentrated sulphuric acid, and collecting it in a cooled receiver of the same metal as the retort. It should be kept in gutta percha or leaden bottles. The concentrated acid dropped upon the skin produces deep malignant ulcers, so that great care should be used in its management. The vapor of this acid is used extensively in etching on glass. A weak solution forms one of the most useful solutions for cleaning dirty bottles A solution of the commercial hydrofluoric acid (1 — 20) has been found to be especially useful in rapidly stripping a hardened gelatine film from its glass support.

ACID, HYDRIODIC—$HI = 128$—Prepared by introducing, first, iodine into a test tube, then a small quantity of roughly powdered glass moistened with water, then a few fragments of phosphorus, and lastly more glass, and so on in the order above given till the tube is at least one-half or two-thirds full. A cork and bent tube is then fitted and gentle heat applied. Or, iodine in fine powder is suspended in water and a stream of washed hydrogen sulphide is passed through the mixture, sulphur is deposited and the iodine is converted into hydriodic acid. It is colorless, highly acid, and greatly resembles the corresponding chlorine compounds. Forms the iodides with bases.

ACID, HYDROSULPHURIC—Sulphureted Hydrogen, $H_2S = 34$—Prepared by the action of sulphuric acid diluted upon monosulphide of iron, and by decomposing antimony bisulphide with hydrochloric acid. The first method yields it the most easily, the second in the purest state. A colorless gas, odor of putrid eggs, most offensive when in small quantities. Not irritant, but powerfully narcotic.

ACID, HYPOCHLOROUS—$HCl\,O = 52\frac{1}{2}$—Prepared by passing air saturated with hydrochloric acid gas through a solution of potassium permanganate acidulated with hydrochloric acid and heated in a water bath; the distillate is a solution of hypochlorous acid, formed by oxidation of the hydrochloric acid The aqueous solution has a yellow color, acid taste, and characteristic sweetish smell. Is a very powerful bleaching and oxidizing agent.

Acid, Molybdic—MoO_3 – Prepared by roasting native molybdenum sulphide and dissolving in ammonia. Lately reported in connection with oxalic acid to form a sensitive salt, to be used for printing purposes. As yet the experiments have not been very successful.

Acid, Nitric—$HNO_3 = 63$—Aquafortis, azoatic—Prepared by distilling sodium nitrate, found native in Peru, with an equal part of strong sulphuric acid, sp. gr. 1·5–1·52. Golden yellow color due to nitrogen tri-oxide. It is exceedingly corrosive, stains the skin a deep yellow, and causes total disorganization. Two drachms said to be the smallest fatal dose known. Pure nitric acid in its most concentrated form is prepared by taking equal parts of nitric acid and strong sulphuric acid, and redistilling. It is less energetic upon many metals and organic substances generally than an acid containing water.

Acid, Nitrohydrochloric—$HNO_3 + 3\,HCl$—Aqua regia—Prepared by mixing three parts of hydrochloric and one part of nitric acid. The oxygen of the latter combines with the hydrogen of the former, setting free the chlorine and forming water. It rapidly attacks and dissolves gold and platinum, and is extremely useful in forming salts of those metals for photographic work.

Acid, Nitrous—$HNO_2 = 47$—Obtained by dissolving the tri-oxide in ice cold water, producing a beautiful blue liquid. At ordinary temperature it is very unstable. The metallic nitrites cannot be obtained by treating the aqueous solution with metallic oxides, on account of this very instability ; but they are formed in other ways.

Acid, Oxalic—$C_2H_2O_4 + 2H_2O = 126$—Exists in many plants as a potassium or calcium salt, and is produced by the oxidation of a great variety of organic compounds, by the action of nitric acid, or by fusion with caustic alkalies. It is prepared in large quantities by heating sawdust with caustic alkaline hydrates of potassium and sodium, two parts of the former and one of the latter. Oxalic acid crystallizes in colorless transparent crystals, dissolves in eight parts of water at 15·5°, and in their own weight, or less, in hot water ; also soluble in alcohol. The solution has an extremely sour taste, most powerful acid reaction, and is highly poisonous. The proper antidote is chalk or magnesia, forming an insoluble compound of oxalate of lime or magnesia. Sixty grains, mistaken for Epsom salts, has been known to produce death The principal ingredient in the ferrous oxalate developer, and used in other ways.

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

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The Chicago Camera Club.—The last few meetings of this club have been mainly in the way of exhibitions. On March 6th, the Boston Camera Club's "Illustrated Boston" was shown to an appreciative audience. The set is too well known for further mention. On March 28th, "Glimpses of California" was shown to an audience which crowded the rooms. This effort of the Pacific Coast Amateur Photographic Association is one of the best series of lantern slides which has been set in circulation. The workmanship is excellent and the lecture interesting.

Thursday, April 10th, was the date of the first annual meeting of the club. The following officers were elected for the ensuing year: President, Rev. M. L. Williston; Vice-Presidents, Wm. H. Shuey, and Mrs. A. C. McClurg; Secretary, Fred K. Morrill; Treasurer, J. W. Buehler; Librarian, Miss M. E. Sibley; Additional Directors, C. D. Irwin, W. B. E. Shufeldt, Mrs. N. Gray Bartlett, Geo. M. Glessner, Shirley V. Martin. The Treasurer's report showed the affairs of the club to be in an exceedingly flourishing condition.

May 13th the club listened to an interesting lecture by one of its members, Mr. James Colegrove, on the subject of "Early Italian Art," illustrated by about one hundred lantern views. It was also voted to hold a grand exhibition of amateur photographic work in Chicago the coming autumn, of which further notice will be given.

On the evening of May 2d occurred the first public exhibition of the recently completed "Illustrated Chicago" set of lantern slides, by members of the club. The audience was a brilliant one, and the occasion was a pronounced social, artistic, and financial success. This series of views, of special interest in view of the location of the World's Exposition at Chicago, will be exhibited to the various camera clubs of America and Europe the coming season, under the direction of the Boston Camera Club, in its "Interchange of Illustrated Subjects" (Wm. Garrison Reed, manager), to whom applications should be addressed. The following notice from the *Chicago Herald* gives a good idea of the entertainment:

"This society, composed of some one hundred and fifty of our city's amateur photographers, gave their first entertainment, Friday evening, May 2d. Like similar organizations throughout the country, they selected their own city for initial illustration; thus Chicago, historic, picturesque, architectural, and as the World's Fair city, was presented, by means of a stereopticon, to the enthusiastic admiration of some fifteen hundred people who crowded Central Music Hall. The representation was clearly and piquantly accompanied by an instructive lecture by the club's president, the Rev. M. L. Williston. Considering the vast field offered now by our wonderful magic city, with its twenty-four miles of extent along Lake Michigan, the selection from such an infinite subject for presentation in a single evening was judicious and eminently satisfactory. Starting out with reproductions of the rude drawings that pass with its impossible forms as symbolic (for they are like nothing mundane) of early Chicago, the spectator is led through the mythical days, as described by the oldest settler, up into the dawn of modern times. We recognize the Court House of 1855, the ugly but famous wigwam, rendered still more hideous in its bad drawing, the old Post-Office, the Crosby Opera House, with its charming recollections of art and music, the old City Hall, to that fearful epoch marked by the sad sublimity of that memorable scene of ruins of 1871. Then came the Chicago of to-day. Public buildings, business blocks, hotels, streets, Lake Michigan, Pullman, stock-yards, Washington Park Club, railroads, shipping, the river, parks, boulevards, monuments, etc., etc. Some of the scenes were very beautiful, and reflect great credit upon the artistic taste of the photographer. Two or three of the views in the parks and of the surf and waves of the lake were exquisite, as also the cloud effect from which so marvelously appears the World's Fair that is eventually appropriated by the beautiful female figure representing Chicago. All these contributed to the esthetical sentiment of the audience, while the purely commercial element found their pleasure in gazing with pride upon the stately evidences of their city's enterprise in the lofty "Skp Scrapers" which, "lifting to the eternal heavens" their brick and stone "from out a wilderness" of trade thick with smoke, their fine proportions turned into angular monstrosities by the use of the extreme wide angle lens necessary in a narrow street for their photographic production.

Yonkers Camera Club.—The second annual exhibition was held May 12th to 17th in Deyo Building. A noticeable improvement was manifested in the quality of the prints as compared with those exhibited last year, and a predominance of soft, harmonious grays, owing to the general use of bromide and platinum papers. About 100 prints were exhibited, the most noteworthy being "Sundown," an effective landscape study, by Mr. John W. Alexander, the president of the club; Mr. Rudolf Eickmeyer, Jr.'s, fine figure study, "The Reapers," showing two figures in a hill-side harvest field; Mr. S. Hedding Fitch's Adirondack scenes; Mr. F. W. R. Eschmann's Emersonian winter scenes; White Mountain views, by Mr. James G. Affleck; Mr. Otto Beer's landscapes; the canoeing pictures of Mr. Daniel Goodsell; camp views, by Mr. G. Livingston Morse; four admirably arranged views, by Dr. Charles A. Miles; Mr. Harry Oakley's four small figure studies; three enlargements, by Mr. George S. Pentz; "The Evening Prayer," by Mr. John B. Platt; Mr. Robert M. Reevs' series of hand camera views; Mr. George J. Stengel's "Sunrise;" "The Twilight Hour," by Mr. E. T. Sherman, and the exhibits of Messrs. Taylor, Tim, Turner, and Warner. The hanging committee consisted of Messrs. Stengel, Pentz, Sherman, Taylor, Goodsell, and Affleck.

The Providence Camera Club.—June 17th has been selected as the date of the annual outing, which this year will take the shape of a steamboat excursion down the bay to Newport and return. All the clubs in the New England Lantern Slide Exchange have been invited to join the excursion to and elect a delegate. The delegates will hold a meeting on board the boat and elect a secretary for the next season. The programme for the day will be as follows: Leave Providence at 9.15 A.M. on arrival of trains from Boston and Worcester, proceed down the bay, stopping at points of interest, running to Newport Harbor, landing at Jamestown for dinner at the Prospect House. After dinner, returning up the bay to witness the annual races of the Rhode Island Yacht Club which will be sailed that day, reaching Providence about 6 P.M. to connect with outward bound trains.

Selma (Ala.) Amateur Photographic Society.—For some years the amateurs of Selma and vicinity have maintained an organization called the Y. M. C. A. Camera Club. The name has been recently changed to the Selma Amateur Photographic Society. The secretary is Mr. Watkins Vaughan, and Mr. S. Orlando Trippe is treasurer.

Adrian (Mich.) Camera Club.—The amateurs of Adrian and vicinity have recently organized a club under the above name as a section of the Adrian Scientific Society. Several interesting meetings have been held and a club album started. A completely appointed dark-room has been provided for the use of the members. Visiting amateurs will be cordially welcomed. Mr. F. B. Stebbins is the president of the club.

The Photographic Society of Philadelphia.—The regular monthly meeting was held Wednesday evening, May 7th. Reports were made by the Secretary and the Committee on Lantern Slides. The Committee appointed to prepare a Memorial of the late President of the Society, Mr. Frederick Graff, reported the following, which was unanimously adopted and ordered spread on the minutes and a copy sent to the family:

"Perhaps one of the greatest sources of consolation to those who are called upon to mourn the loss of a friend and leader is the review of his past life as connected with themselves and the interests over which he presided, particularly when those recollections fill us with love, admiration, and respect for the character of our lost friend. We think this will be found preëminently the case in regard to our late lamented President, Frederic Graff. We have been accustomed to see him in our midst for so long a time, presiding over our councils, encouraging us by his example and advice, exciting our zeal in the race by his own untiring interest in our work, and his great desire that our noble art should be more than a casual amusement for the passing hour. His own love for it was genuine. Among the very first to take it up as an amateur, and to apply to it all the energy and resources of his well-trained mind, his interest never flagged, nor did his enthusiasm diminish during his life. We find his name attached to the call for the preliminary meeting, October 19, 1862, to discuss the feasibility of forming a photographic society. At this meeting he was appointed chairman, thus actually presiding over the very birth of the society. Those of us (now few indeed) who were present at that meeting cannot fail to recall the earnest words in which he urged the necessity of organized action among those interested in photography. We were then a scattered few, groping in Cimmerian darkness that few of those who now enjoy the full glare of the photographic noonday can realize, each one experimenting for himself, wasting much precious time in arriving at results that some one else had forestalled him in, while he himself was able to supply information as much needed by others. Photographic literature was very limited and inaccessible, and many of the materials used had to be prepared by the operator himself if he desired any certainty in their results; thus it was that we felt the great need of co-operation and opportunity for the interchange of ideas. At the first regular meeting of the society, held November, 1862, he was elected vice-president, which position he occupied until the year 1868, when he was elected president, and continued so until 1870, when his duties as head of the water department of the city compelled him for a time to retire from official connection with the society, but he was always present at its meetings, and his interest in its welfare never ceased. His work as chairman of the Photographic Department of the Sanitary Fair, held in the year 1864, for the aid of our suffering wounded soldiers, showed how earnest was his desire to succor those who were suffering in their country's cause, and the large returns made by his department are the best proofs of his wise and energetic administration. Again in 1886, we find him at our head, and he retained the office of President of our society until his death. On the occasion of his assuming the chair at his election in 1886, after reviewing the advance made in photography during the last twenty-three years (the society at that time being so long in existence), he used the following words, showing how fully he believed in the future advance of the art: "And yet we look for more,—what shall it be? Who can tell what is to be the future of our favorite hobby,—how far will the next twenty-three years of this society see us in advance? We now make pictures upon a paper supported film, and develop them into beautiful negatives; may we not hope to have the finished positive impressed in the camera without further development, even then in colors." These words, taken in connection with the recent discoveries made both in this country and in Europe, seem almost prophetic. The society having now largely increased in numbers, and from the few who assembled for mutual counsel and advice, where formal rules and regulations were not needed, he at once began to urge the importance of a broader and more useful existence, commensurate with the position we should hold in the photographic world. He solicited the members to prepare papers to be read at the meetings of the society and afterwards discussed. He was always first to draw its attention to any advance in the art, and to his energy and foresight we are in a great measure indebted for our flourishing condition and the position we occupy. The social side of his character was not less remarkable. He was always ready to assist with his advice and counsel those standing in need, and his reassuring words have cheered many a fainting heart. Well does one of your committee remember when, after a series of the most disheartening failures, he had almost resolved to abandon his work as a useless waste of time and money, when the words of advice and encouragement he received from him urged him to renewed and more successful efforts. We can all recall the genial influence of his character which seemed to pervade all our informal gatherings and excursions, always ready to contribute his share to render the occasion a success, and by his example making us indeed a united band; and that the spirit which animated him may always be present in the future; and that his example and precepts may excite us to renewed action, is the fervent wish of your committee."

(Signed) JOHN C. BROWNE,
F. T. FASSITT,
GEORGE VAUX, JR.

On motion it was directed that the Memorial be spread upon the minutes of the Society, and a suitably prepared copy be presented to the family of the late President.

Mr. Joseph Burroughs, on behalf of the committee of ten, appointed to consider the advisability of securing more convenient quarters, and the establishment of a working department for the society, reported that several meetings had been held, but the committee was not yet prepared to make a final report. The further discussion of the matter was postponed to Wednesday, May 14th.

Mr. Stirling opened the discussion on "Optical Lanterns," giving a brief account of the development of the lantern and some account of the various methods of illumination.

Mr. Frederic E. Ives exhibited a number of excellent photo-micrographs; Mr. Francis Burrows showed a French hand camera in the form of a pistol, carrying a roll of Eastman films; Mr. Morris Earle exhibited a camera made by Messrs. R. & J. Beck, the mountings of which, as well as the lens, were of aluminum; Mr. Walmsley showed a neat and compact photo-micrographic camera, attachable to the microscope in any position, and Mr. Hanawelt displayed an exposing shutter of his own invention.

The Providence Camera Club.—The sixth annual exhibition, held in the gallery of the Art Club, May 20th to 24th, was one of the best ever held by the club. Nearly three hundred prints, the work of twenty-three exhibitors, were shown. The neatly gotten up catalogue is embellished with a photogravure plate from a negative by Mr. Charles A. Stoddard, and a half-tone reproduction from a flash-light negative of a night-blooming cereus plant in bloom, made by Mr. Clinton Fuller. At the time of going to press we have received no further particulars regarding the exhibition.

Lynn Camera Club.—The first annual exhibition held at the Club House, May 27th to 31st, may be set down as a decided success. While the number of prints was not large, not more than sixty prints being hung, the quality of the work was above the average, and the predominance of soft, cool bromides was gratifying. The judges were Messrs. Currier and Briggs of the Boston Camera Club, and W. H. Burbank of the AMERICAN AMATEUR PHOTOGRAPHER. Mr. Briggs was unable to attend, and the other two judges found it difficult in many cases to decide upon the prize winners, owing to the general eveness of the work. The list of prize winners follows: The Eastman Company's prize, a Kodak, for the best enlargement on bromide paper from a Kodak negative was awarded to Mr. J. W. Darcy's "Spring Saunterings." The "Revere Beach Railroad Ferry Slip," by the same exhibitor, was awarded the second prize, a diploma; and the third prize, a diploma for technical excellence, went to Mr. N. J. Bacheller's "The Young Florists." In the class of bromide enlargements from any negative, the first prize, one dozen sheets of 14 x 17 bromide paper, was captured by Mr. E. F. Bacheller with his "Happy Pair." A diploma for artistic merit in this class was awarded to Mr. J. W. Coat's," "The Old Mill Dam."

Mr. E. F. Bacheller's platinum print, "Ravine Road, near Spot Pond," Mrs. Jeannette M. Appleton's "The Avenue of Pines," Manchester, and Mr. George S. Bliss's "Ithaca Gorge," received first and second class diplomas in contact bromides. Mrs. Appleton also captured all three diplomas in the silver print class. Mr. A. J. Purington's "Willows" took the diploma for positive films. In transparencies Mr. Hermann Lemp's "Home of Mrs. Harriet Beecher Stowe," received the diploma. Other exhibitors were: Dr. E. Williams, Miss J. F. Callahan, Miss M. A. Callahan, Mr. T. D. Hoyt, Mr. W. A. Porter, Miss M. I. Baldwin, Mr. S. F. Breed, Mr. Roy Bartlett, Mr. F. W. Pope, Mr. J. W. Bowley, Mr. A. H. Carsley, Mr. E. L. Rogers, Mr. W. A. Pevear, Mr. F. W. Pope, Mr. W. H. Godfrey, Dr. J. W. Goodell and Mr. Fred E. Bramhall.

Taunton, Mass., Camera Club.—The officers of this recently organized club are the Rev. H. B. Cady, Dr. Strout, and Mrs. Kent, principal of the High Street Grammar School.

Richmond, Va., Camera Club.—The club has secured and fitted up rooms at No. 120 North Eighth Street. Several new members have been added recently, and much interest is manifested in the meetings.

The Camerads, New Brunswick, N. J.—The club has recently been re-organized, with the following board of officers: President, Prof. P. T. Austin; Vice-President, W. Horn; Secretary and Treasurer, Dr. Harvey Iredell. Regular meetings, every Thursday evening.

Schenectady Camera Club.—This new organization is officered as follows: President, Prof. M. L. Perkins; First Vice-President, W. C. Vrooman; Second Vice-President, J. L. Cornall; Treasurer, W. H. Peckham; Secretary, W. E. Underhill. Meetings, first evening of the month, at Meyer's Arcade.

QUERIES AND ANSWERS.

21.—" Amateur " asks the following questions: 1.—What is the best hardening agent for negatives? A ten per cent. solution of tannin. 2.—How can hypo be removed from negatives when an abundant supply of running water is not obtainable? The best method is to wash the negatives, films down, in several changes of water. A simple means of doing this is to make a washing trough triangular in shape with an escape plug low down at one end. This will accommodate negatives of various sizes. The negatives are placed in the trough, film side down, and the trough filled with water. Every fifteen minutes the water should be drawn off and the trough again filled. Five or six changes will be sufficient to remove the hypo. 3.—How may a single solution of hydrochinone developer be prevented from changing color and staining the negatives? The most efficacious remedy is to throw the bath away. Hydrochinone, like pyro, is best used in a dry form. Very little is gained by keeping any developer in a liquid form except a slight saving of time and labor, which is more than counterbalanced by the uncertainty and risk of staining inseperable from such a method. 4.—How can detail and contrast be obtained in development without destroying the half-tones? We take it that the half-tones in " Amateur's " negatives are veiled over through over-development. If possible, use less alkali or add a trace of bromide before beginning to develop. This should keep the shadows clear if the exposure has been right. 5.—What causes flare spot when small diaphragm is used? Not easy to answer without examining the lens. It may be caused by the image of the opening being projected and sharply focused on the film, or it may be due to light reflected from the lens mount or the stop itself. In the first case, something may be done by slightly changing the position of the diaphragm or unscrewing each of the lenses half a turn or so. In the second case, the interior of the mount and the edges of the stop should be blackened. 6.—Will negatives keep well without being varnished? Yes. 7.—Does washing over night destroy brilliancy in prints? Without doubt.

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BOOKS AND EXCHANGES.

THE AMATEUR PHOTOGRAPHER'S HAND-BOOK. By Arthur Hope. Pp. 1—151. Chicago, 1890. The John Wilkinson Company. $1.25.

Mr. Hope's book well sustains its title. The completeness and variety of its contents make it a hand-book for the amateur, who will find its pages filled with valuable information, some of which has never been published. The book is a complete guide to the practice of photography in its most usual phases. The chapters on exposures, development, blue prints, interiors, copying, lantern slides, and ornamental photography, are particularly valuable. The various processes are described plainly and explicitly, and the book cannot fail to benefit those who profit by its instructions.

BREEZY MARSHLAND. A beautiful photo etching, 15 x 22, from a negative by P. H. Emerson, etched by Walter L. Colls, London, Eng.

In sending this and other excellent specimens, Mr. Emerson does us a favor which is highly appreciated. The treatment of a most difficult and ordinary subject is very artistic and brings out in strong relief the points Mr. Emerson has so fervently urged in his book on " Naturalistic Photography." The picture is of a vast meadow relieved in places by clumps of trees. The center of interest is a single cart load of hay drawn by two horses in tandem, the forward one being led by his master, approaching the camera. To the right of the road is a cluster of old willows blowing in the wind, the tops somewhat blurred, on the left is a figure at a gate, as if to open it for the cart to turn in. The road back of the cart winds off to the left and is lost in the distance. The only objects that are fairly sharp are the horses, cart, and hay, the other portions are slightly blurred, which brings out the team as the principal subject of interest. The background behind the load of hay is the willow trees, and as they are of the same color, the configuration of the load is not easily discernible. Had the cart been brought forward a little and carried more to the left, it would have caused the white sky for a background to have made its shape more easily noticed. Where there is, however, so much to commend, it is perhaps needless to point out these changes. It is an exceedingly artistic photograph. Mr. Emerson should be thanked for endeavoring to elevate the art. It shows what can be done by a little thought.

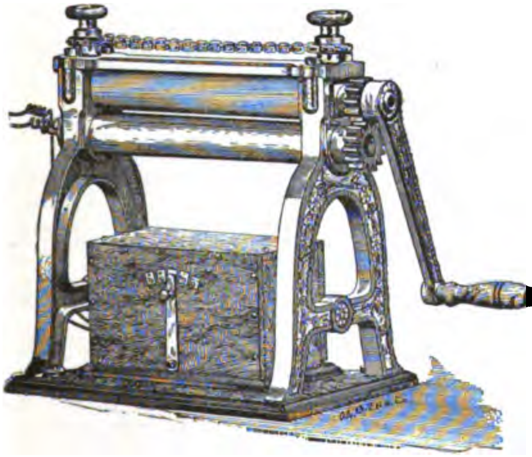
◆

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

We are constantly receiving letters asking for the addresses of reliable firms who make a specialty of bromide and solar enlargements. There are a large number of such firms, all doing good work. We have personal knowledge of the quality of work turned out by our advertisers, Messrs. Miller & Litchfield, and have no hesitation in recommending them to those of our readers who may wish to have enlargements made from their favorite negatives.

C. R. Carley, Syracuse, N. Y., has recently brought out an electric photograph burnisher. It is of the well-known rotary type, and consists principally of two ends or frame-work supporting two hollow steel rolls, the upper one being knurled or milled, and the other one highly polished. The two rolls travel in the same direction, but one is geared so as to revolve faster than the other, thereby causing friction enough to polish the picture. A single hand wheel is used to adjust the rolls to suit any thickness of card. All of the bearings are made of anti-friction plumbago metal, and will run for years without oil. This is a strong point in this machine, as a single drop of oil or soot will spoil any photograph. The heating apparatus consists of a resistance coil of German silver wire, and is placed inside of the lower or polishing roll, and thoroughly insulated from it. It is so arranged as to be removed easily from the roll if at any time it should become necessary to do so. Simple binding posts serve to make connection with the outside current. A suitable rheostat is placed under the rolls, or near the machine in any convenient place, and, by simply turning a small lever, the heat is regulated to suit the work, or entirely shut off, as the case may be. By this process of heating the roll is kept constantly at the same temperature the entire length, and will heat in five minutes up to 250 degrees Fahrenheit. It works equally well when connected to a storage battery, and will heat just as quickly. The annexed cut explains the constructive details.



An Improved Diaphragm Shutter.—After a prolonged series of experiments, extending over several months, the Bausch & Lomb Optical Company, Rochester, N. Y., have produced a diaphragm shutter which possesses many points of superiority over their excellent 1889 model. In the new model the blades of the iris diaphragm are of hard rubber, all the working parts are at the front, the speed regulator is not affected by changes in temperature, there is little or no concussion even when the shutter is working at its greatest speed, and all the parts have been materially strengthened. There is absolute control of the time exposures, and large indices are provided for reading the time of exposure and the size of the stops. All these improvements, supplemented by the fine workmanship for which the firm is noted, make a shutter which would seem to leave little to be desired.

The Voigtländer Lens.—Benjamin French & Company have just issued an enlarged catalogue of these reliable lenses, which includes the new rapid wide-angle Euryscope, which is now recognized as the great lens for groups at short range, the smallest being a wonder for 4 x 5 hand cameras on account of its speed and the amount of fine detail rendered by it. Two pages of the catalogue are devoted to a table showing the distances required for various sized heads and figures with the different lenses. A carefully prepared table of contents, hints on "the care of lenses," and a table for use with the optical lantern, make the catalogue useful as a reference book.

◆ ◆ ◆

United States Photographic Patents

Issued in May, 1890.

MAY 6th.

19,831—Design Patent, Album Leaf; E. G. Thorp, Boston, Mass.
427,187—Photographic or Laboratory Lamp; H. G. Ramsperger, New York, N. Y.
427,321—Camera Back-Piece; J. F. Hein, Boston, Mass.
427,322—Plate Holder; J. F. Hein, Boston, Mass.

MAY 13th.

427,727—Apparatus for Displaying Stereoscopic Views; C. C. Bishop, Nashville, Tenn.
427,766—Means for Printing Backgrounds; E. N. Howe, Forest, Ohio.
427,778—Camera; J. A. Mailloux, Brookline, Mass.
427,937—Burnisher; S. O. Tuerk, Syracuse, New York.
428,036—Portable Dark-Room; G. Bausch, Syracuse, N. Y.

MAY 20th.

428,448—Camera; T. H. Blair, Boston, Mass.
428,472—Photo-Mechanical Printing Plate; O. Dubois, Fall River, Mass.
428,483—Method of Manufacturing Transparent Relief Pictures; W. Hagelberg, Berlin, Germany.

MAY 27th.

428,797—Roll Holder for Cameras; T. H. Blair, Boston, Mass.
428,809—Photographic Plate Holder; W. H. Fuller, Passaic, New Jersey.

* * *

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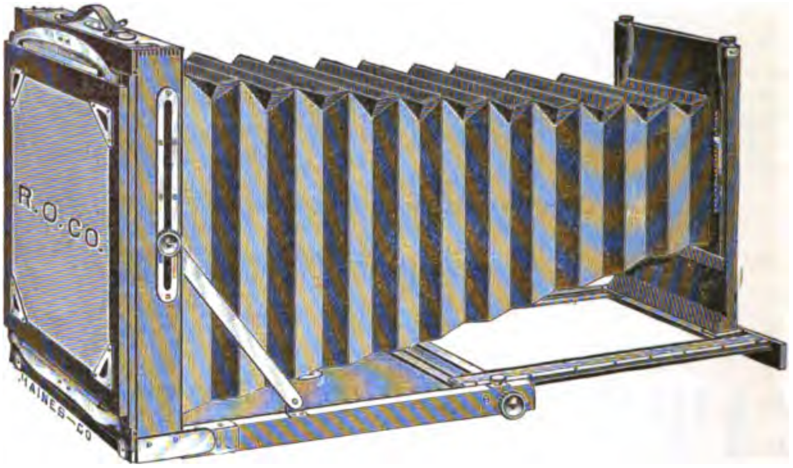

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Possessing every advantage peculiar to detective or hand cameras, and the adjustability of the bellows body. In size it is 5 x 6 x 9 inches, the smallest 4 x 5 detective made, and yet it will accommodate any lens from 4½ to 8 inches focus.

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The Camera includes a flap shutter in rear of the lens for use in changing stops or shutter speed, and four of the new patent Ultimate Plate-holders, the smallest 4 x 5 double-plate holders made. These are locked in position by a new arrangement which holds them rigidly in place by the simple act of placing them there.

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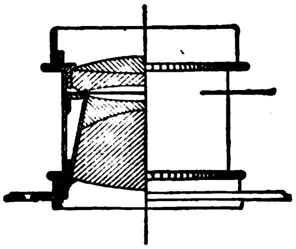

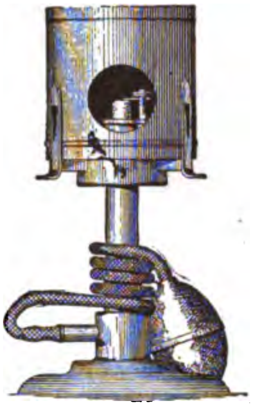

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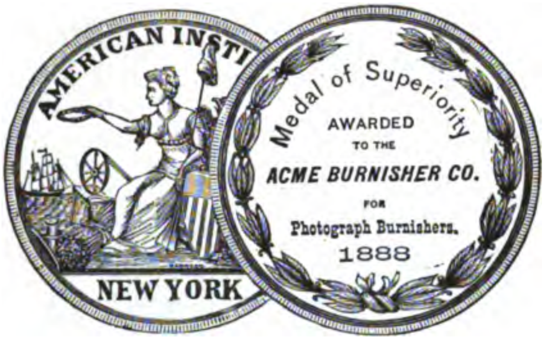

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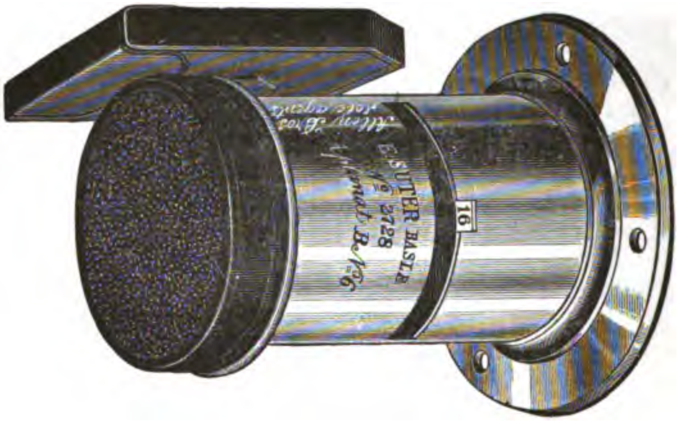

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"The Rembrandt," 152 West Fifty-Seventh Street, New York, February 20, 1889.

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Yours very truly, (Signed) R. SWAIN GIFFORD.

(From the Balloon Photographer.)

Winsted, Conn., November 26, 1886.

Messrs. ALLEN BROS.—Dear Sirs.—Although circumstances compelled me to give up my projected balloon trip this fall, I have used my 3 A "Suter" for other work—photos of animals, viewing, etc. I am glad to say that each time I have used it, it has impressed me with a stronger sense of its good qualities. With your lens and a Prosch Duplex Shutter, which is fitted to it, I feel well equipped for quick work, and feel confident of success in my next balloon trip, whenever that is. Very respectfully, JOHN G. DOUGHTY.

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THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

Vol. II. BRUNSWICK, ME., JULY, 1890. No. 7.

Our Illustration.

WE give this month the second of Mrs. Cleveland's prize series "A Jolly Story Interrupts Lunch." No. 1 was given in our De[illegible] but the photogravures did not do full justice to the negative [illegible] have selected silver prints for No. 2, and as before, we have the pleasure of giving Mrs. Cleveland's own account of the genesis of the picture.

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The Genesis of a Picture.

NO. II.

By Mrs. S. M. Cleveland.

IN the December number of this magazine there was published the first picture of a series of three intended to illustrate the relation of triangular forms to pose in genre photography. Could I have followed up the subject in successive issues, repetition of statement would have been unnecessary; but the AMATEUR PHOTOGRAPHER is so crowded with the advances in our art that each month dims the brightness of its predecessor, and I am compelled to refer to my former paper in deference to the memory of those readers who have honored me with their attention.

I proposed the thesis that most geometrical forms—notably, though not solely, triangles—have inherent æsthetic meanings when viewed as vehicles of artistic expression; that if inherent, then indisputable and unvarying; and that through them, therefore, and only through them—variously modified—can the artist put himself at one with nature in illustrating a given sentiment. In "A Jolly Story Interrupts Lunch," I chose the theme of mental life on the increase, of attention augmenting but not at its full, of life still expanding; and these include, on the emotional side, aspiration, alert

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THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

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Our Illustration.

WE give this month the second of Mrs. Cleveland's prize series, "A Jolly Story Interrupts Lunch." No. 1 was given in our December issue, but the phototypes did not do full justice to the negative. Hence we have selected silver prints for No. 2, and, as before, we have the pleasure of giving Mrs. Cleveland's own account of the genesis of the picture.

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The Genesis of a Picture.

NO. II.

BY MRS. S. M. CLEVELAND.

IN the December number of this magazine there was published the first picture of a series of three intended to illustrate the relation of triangular forms to pose in genre photography. Could I have followed up the subject in successive issues, repetition of statement would have been unnecessary; but the AMATEUR PHOTOGRAPHER is so crowded with the advances in our art that each month dims the brightness of its predecessor, and I am compelled to refer to my former paper in deference to the memory of those readers who have honored me with their attention.

I proposed the thesis that most geometrical forms—notably, though not solely, triangles—have inherent æsthetic meanings when viewed as vehicles of artistic expression; that if inherent, then indisputable and unvarying; and that through them, therefore, and only through them—variously modified—can the artist put himself at one with nature in illustrating a given sentiment. In "A Jolly Story Interrupts Lunch," I chose the theme of mental life on the increase, of attention augmenting but not at its full, of life still expanding; and these include, on the emotional side, aspiration, alert gladness, and all phases of what we understand by joy—because joy "never is, but always to be blest." I endeavored to show that a figure embodying such thought or such emotion must necessarily be inclosed within lines which the mind recognizes as having the same trending, and I proposed the isosceles triangle having its base greater than half of one of its sides, as the geometrical outline that inherently denotes uplift and development. The proposition has a qualification and an expansion. The qualification is this: that the salient part of the figure, that is the head and face, occupy the base; and the expansion is this: that not merely by the lines of the human subject is this triangular form to be realized, but by every accessory introduced into obvious or necessary connection with it. This, indeed, is to the artist the more important part of the law; and if it were only observed, what relief we should have from the mass of unrelated, and therefore incongruous details that so often obscure or distort the subject of a picture! My proposition demands not only that every important detail be related to the subject, but so intimately related as to be an essential part of its pictorial scheme by being included within its geometrical lines. My little sitter, for instance, is, in himself, posed in almost an equilateral triangle—a great mistake, if this were all, for the meaning of such a triangle is the reverse of what I was trying to say; but by introducing a bitten apple by the side of the boy, I made such a bright spot in the picture that the eye is irresistibly led to it, and thus lengthens the lines into the isosceles form and makes the detail an essential factor in the picture.

To-day, I present the same sitter in a very different attitude of emotion, and therefore in a very different scheme of lines. The story that before had only aroused the lad's attention, now enchains and completely fills it by its culminating interest. The adventures of Jack, possibly in the very grasp of the Giant's jaws, enthrall my boy's imagination and hold it bound by a sweet spell from boyhood's wonderland. Can this stripling champion escape the fate so close to him, or must his life go out in the cruel crunch of the monster's teeth that gleam for him? It is this moment of intensest interest, when the whole soul is absorbed in its emotion, that I have selected for my subject. The facial expression I cannot of course arrange; it must come of itself; but, granted it there, there is one thing I can do—re-enforce it by pose. The half-indolent attitude would naturally be abandoned, the supporting hand would drop as the eager head raised itself more rigidly, and the mug, which was half way to the thirsty lips, would fall over forgotten. Look now at the picture as thus indicated. Conceive the cat out of the way and the right elbow resting on the table. Draw, then, tangent lines about the figure, and you find it enclosed in an equilateral triangle, precisely what I meant to attain, holding that this is the geometric form which expresses emotion dominant or act accomplished.

Having thus made the figure consonant with the expression, I might have rested; but I had a further purpose—to show how accessories could be worked in so as not only to harmonize with the line-scheme, but to enhance it. It is true that the equilateral carries forward to completion the sentiment of the isosceles, provided that the isosceles is used as in my last picture,—the vital element occupying the base. But does it carry the sentiment forward as far us it can be carried? Does it indicate fullness of emotion at its highest? By no means. One cannot look at the imaginary line drawn between the elbows and not wish to widen it almost indefinitely; one cannot but feel that if it were so widened, the head—standing here for the emotional nature—would be dominant over more than the body, and, by including outside details within the lines that radiate from it, would make the material tributary and the spiritual ascendant. The equilateral is thus sacrificed, but only to merge in a fuller expression of its own meaning. A new isosceles is formed; but the head is at its apex, and as long as this center of intellect and passion presides over the triangle, the broader the base the more complete is the expression of absorbed emotion. The feeling masters the subject, but the subject, by broad lines, masters its surroundings; the feeling, therefore, subjugates the little world which is included in the picture. In this, it seems to me, is the highest genius of composition. Many a clever artist can and does render the expression of his human subject in lines which, if analyzed, show that a true instinct has presided over his scheme of form; but only the great paintings so include details in this scheme as to render them inherent parts of it, and compel the physical to further the ends of the spiritual.

Descending to the pictorial trifle by which I have tried, in a simple way, to illustrate this second use of the isosceles, I have only to add that I kept the apple as one of the details to be included by the broad base because I started with it, and the picture is still a picture of lunch and the same lunch. I introduced the cat for several reasons: First, she engages more attention and makes the picture more sympathetic in tone than any inanimate object would have done. Second, I could enhance the rapt emotion of the boy by the contrast of putting her asleep; and further, I was not uninfluenced by the desire to have a record of his favorite playmate. In thus securing a picture of my laddie at his best, I have pleased myself: if I have pleased the students of the Amateur Photographer, it will be a large additional gratification.

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Lantern Slide Work.

By Godfrey Bingley.

[A paper read before the Leeds Photographic Society.]

WHAT I have to say this evening will, in a great measure, be based on my own short experience, and though what I may bring forward may be "stale, flat, and unprofitable" to many of the older members of this society, I trust that it may be of some little assistance to any who have not yet attempted to make lantern slides. For some reason or other, only a small proportion of the members of this society sends in lantern slides to our annual lantern exhibition. Certainly there is no better or more pleasing way of showing photographs than by exhibiting them on a screen with the aid of the optical lantern; the fact that so many people go to our lantern exhibitions is in itself a proof that this branch of photographic work is appreciated, and to the photographer the artistic qualities and *failings* of his work become more manifest when seen enlarged on the screen, than when viewed on a small print. Before proceeding farther, it may be well to allude to the best size of camera to work with, as some amateurs do not care to make anything but lantern slides. Small cameras are made to take a plate 3¼ square, and although this small-sized camera may do for ordinary landscape work, it is practically useless for instantaneous photography, such as marine and sea-side studies, cattle pieces, and other moving objects. Many of you, no doubt, who work quarter-plate cameras, have found them too small for this class of work, and have been considerably disappointed, when the plate has been developed, to find nothing but a barren waste of water, or a field with the surrounding fence the only subject on the plate. I would therefore advise nothing less than quarter-plate, or 5 by 4.

Lantern slides are made either by "direct contact," or by "reduction" from the negative by re-photographing from the negative by means of the camera and a reducing frame.

Slide-making by "direct contact" is the plan most generally adopted by amateurs, because of the ease with which it can be done by artificial light; but I very much prefer, however, making slides by "reduction," especially if working from a half-plate or larger negative. No doubt very good slides are made from quarter plate negatives by "contact," but how few pleasing ones are made from the larger sized negatives in this way, for when taking a view with the camera you study the proportions and composition of the picture in relation to the size of the plate you are working, and not simply with the idea of printing out a picture 3¼ square; it is only by "reduction" you can get the full value of your negative on the lantern plate. Another advantage obtained by "reducing" is that a soft slide may be made from a hard negative, and also good slides from poor and faulty negatives, negatives from which it would be impossible to make a slide by "contact," or even to get a passable silver print from. In "contact" printing, the length of exposure required of course varies according to the make of plate used and the density of the negative. I think it is best to have one fixed distance from the light for exposing the slide, and to vary the *time* of exposure according to the density of the negative, rather than vary the distance. If the *distance* the frame is held from the light be varied, always remember that the length of exposure will increase as the squares of the distances the frame is held from the illuminant, and not in a numerical ratio; for example, if an exposure of 10 seconds at one foot distance is sufficient, and the distance is increased to 3 feet, an exposure of 90 seconds will be needful.

For making slides by "reduction" some sort of reducing frame is required to hold the camera and negative; the apparatus is, however, very simple. It consists of a baseboard on which there is a sliding block to carry the camera at one end, and at the opposite end a deep box about ten or twelve inches square, open at the end next the camera, the other end holding a sliding carrier in which to place the negative.

"Reductions" are best made by daylight. The plan I adopt is as follows: Having placed my reducing frame, on which I have fixed a quarter plate camera, in front of an upper window (in the lower square of which I have inserted a sheet of ground glass for the purpose of diffusing the light), I place the negative in the sliding carrier and carefully focus it, then stop down the lenses to U.S. 16, and expose the plate in the usual way. The exposure, of course, varies according to the light and density of the negative as in "contact" printing; at this time of year the exposure will vary from 30 seconds to a minute with a fair average negative. A long exposure and retarded development will give warm tones; a short exposure and active development will give black tones, and I find the tones are always warmer if the exposures are made on a bright, sunny day, than even with a long exposure on a dull day. I advise, however, that workers should adhere to one *standard strength* of developer; and for "contact" printing one *fixed distance* from the light for exposure, and produce the tone desired solely by the time of exposure. If this plan is adopted I am sure much more satisfactory results will be obtained than by continually altering the strength of the developer, and varying the distance the plate is held from the light.

Most of the slides prepared by professionals are made by the collodion or wet plate process; very fine slides are also made by collodio-albumen.

It is generally considered that there are no lantern slides at all equal to those made by one or other of the collodion processes. No doubt for brightness and "sparkle" collodion slides are difficult to surpass, but there is often a want of half-tone about them, consequently little gradation between the high-lights and shadows. The gelatine plate is running the collodion process a very hard race; and I venture to think—though it may be considered somewhat heterodox to even throw out the mere suggestion—that for softness and half-tone the gelatine plate holds the field. I do not propose to enter into any details of the working of the collodion processes, neither do I intend to say anything about preparing gelatine plates, as I have had no experience in any of these branches of photographic work. I know there are several of our members present who prepare their own plates, and who have in the past given us the results of their experience. There are many good makes of plates on the market, and for those who do not care to make their own, I would say try several makes, and then stick to those you find give you the best results. I may say in passing that gelatino-chloride plates are of no use for reducing, as they are far too slow.

Lantern plates are usually developed either by ferrous oxalate, pyro and ammonia, pyro and washing soda, or hydroquinone. Formerly ferrous oxalate was the favorite developer for lantern plate work, but it is not so much used now. The tones produced by it are always of a cold gray, and considerable care is required when working with it, for the slightest contact of hypo will cause a fog to spread over the plate. Pyro and ammonia is a favorite developer with many workers; some add a little carbonate of ammonia to obtain red tones. A very good developer, and one easy to work with, is washing soda and pyro. It gives pleasing tones, but it has, however, the disadvantage of often leaving a yellow fog on the plate, which must be removed by a clearing solution, and, unless considerable care is used in clearing, many of the finer details may be entirely removed; and if allowed to remain in the solution too long, the plate loses its sharpness, and looks flat when shown on the screen.

Hydroquinone has now come into great favor as a developer for lantern plate work, and is the one I prefer to all others. It gives absolutely clear glass, and the slides require no clearing after development, unless they have been taken from thin or faulty negatives, when a little local clearing by means of a camel's hair brush may be required.

The formula that I like the best is one given by Thomas & Co., with their plates, viz.:

No. 1.—	Hydroquinone,	160 grains.
	Sulphite of soda,	2 ounces.
	Citric acid,	60 grains.
	Water,	to 20 ounces.
	Bromide ammonium,	20 grains.
No. 2.—	Carbonite of potash,	2 ounces.
	Carbonate of soda (crystallized),	2 ounces.
	Water,	to 20 ounces.

Use an equal quantity of each.

I generally develop four plates with 2¼ ounces of solution. I have developed as many as ten, but four are quite sufficient, for after that number the developer becomes very slow, and has a tendency to "block" the shadows.

Eikonogen is said to produce similar results to hydroquinone, but I have never tried it.

It is better to develop slides by artificial light rather than by daylight passing through some non-actinic medium; for daylight is so variable in its intensity that it renders it difficult to judge the proper density of the slide in consequence; whereas, by artificial light, you can have one fixed standard, and develop the slides to pretty nearly an equal density. It is desirable to develop a little denser than required, as the slide loses a little of its density in the fixing bath. Immediately after placing the plate in the developing solution, pass a camel's hair brush (kept in a cup of water near the developing dish) rapidly over the plate, to remove any small air-bubbles which may be on the surface of the film. After development, the plate requires a good wash under the tap, and should then be placed in the fixing bath

Hypo, ...	4 ounces.
Water, ...	20 ounces.

and allowed to remain there for a few minutes after all whiteness has disappeared, so as to ensure thorough fixation. Wash again after removal from the fixing solution, and place it for a short time in a saturated solution of alum to harden the film. If working with hydroquinone, on no account place the plate in the alum solution *before* fixing, or you may obtain a result not to be desired.

If from any error in exposure, or if the slide is taken from a thin negative, causing it to be opaque where there ought to be clear glass, this opacity may be removed with a little care and patience by the aid of the following clearing solution:

Sulphate of iron, ...	3 ounces.
Alum, ...	1 ounce.
Sulphuric acid, ...	1 ounce.
Water, ...	20 ounces.

Pour a little of this solution into a small dish, and place a basin containing clean water near; then, holding the plate in the left hand, with the sky or fogged part slanting downwards, so as to prevent the clearing solution running into the details of the picture, paint with a small brush the clearing solution over the fogged part of the plate until it becomes quite clear, frequently dipping the plate into the water during the process to prevent the clearing solution spreading over the plate. Any over-dense shadow may also be reduced in this way. Before doing this, take care that the slide has been in the alum bath. Lantern slides must be quite free from fog or veil; the above method will quite remove this defect, and, if care is used, the details of the picture will not be injured. After fixing and clearing, as above-mentioned, the slide should be washed for a few hours in the same way as an ordinary negative. On taking the plates out of the washing trough, it is advisable to give each a good rinse under the tap, so as to remove any particles of grit that may have been deposited on the film from the washing water, and then place them on edge to dry—not in a rack—where they will be kept quite free from dust.

There are several methods of toning slides, but I have not tried any of them, for I much prefer the rich brown, or even the black tone of the ordinary photograph, to the red or other tints that may be obtained by toning, and I believe there is considerable risk of a toned slide fading away.

When the film is thoroughly dry, it is ready for mounting for the lantern. I am sorry to say there is often but little care exercised with this part of the work, and many an otherwise good slide is completely spoiled by the careless and slovenly way in which it is mounted. The photograph and cover glasses should be absolutely clean, and free from all dust and finger marks; and here I would say a word as to the thickness of the cover glasses. Very thick glass adds much to the weight of the slides, as you will find to your cost if you have them to carry far. The *extra thin* covers are the nicest, but, unfortunately, they soon break when using the slides; even the pressure of the fingers will do this; therefore, I would say, use a medium thickness of glass, and take care to have it free from scratches and air-bubbles. The paper mask to be placed between the photograph and the cover glass should be of suitable shape, and carefully adjusted to the size of the photograph; on no account use the circular masks, as this shape is most inartistic, and frequently quite spoils the picture. The masks having one white side and the other colored are the best, as the white side is an indication to the lantern operator as to the side of the photograph to be placed next the light, and it also enables the name of the slide to be written upon it. The binding strips should be neatly put round the edges of the slide, and two white or colored disks placed on the two top corners of the front of the slide, to show at a glance which is the top of the view; then carefully remove all finger and gum marks, and the slide is complete.

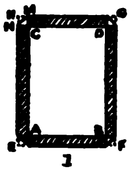
Bellows Making.

IN response to many inquires for a practical article on bellows making, we reproduce from *La Nature* an article on the subject, by M. Fourtier, which will be found to cover the subject thoroughly. Camera bellows are of two forms, square and truncated. In the former, both ends are of the same size, while in the latter the front end is smaller than the back. The general method of construction is the same in both cases. Such deviations as are necessary in the details of construction are clearly indicated in the description, which the cuts will make easily intelligible.

In the explanation the term top folds (Fig. 5, B,) is applied to those which form a projecting side, and bottom folds, A, to those which form a sort of gutter. In the cuts the former are indicated by solid lines; the latter by dots.

The first step in the construction is to draw an end plan (Fig. 1), the exact size of the bellows, forming the rectangle, A, B, C, D, in which the sides A, B, and C, D, are 5 inches long, and the sides, A, C, and B, D, eight inches, for a 5 x 8 bellows. A second rectangle is then drawn outside of the first, leaving between the two a space equal to the width of the folds of the bellows, one inch for a 5x8, and one and one-half inches for 8 x 10 and over. The diagonals, M, N, of the corner squares are then drawn for use later on, as will be described.

The dimensions of the folds are given by the shaded rectangles. The number of folds is governed by the length of the bellows, which must be slightly in excess of the length of draw desired. If twenty inches is the length of draw the bellows should be made about twenty-two inches long. This will require eleven one-inch folds. Having determined these measurements, four rectangles, twenty-two inches long, are drawn side by side on a large sheet of three-ply bristol board. Two of these rectangles are five inches wide, and two, eight inches (Figure 2). Parallel lines are next drawn transversely across the rectangles, one inch apart, and the rectangles are then cut apart with a sharp knife.



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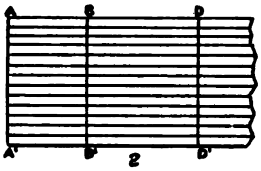

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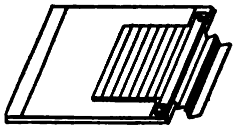

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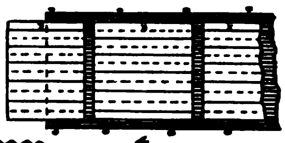

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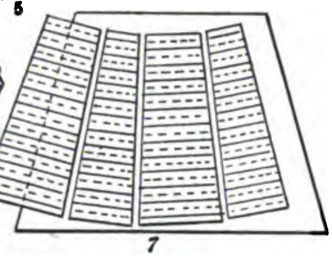

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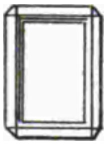

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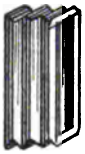

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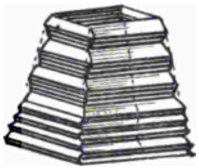

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The next step is to make the folds. For this purpose the arrangement shown in Fig. 3 answers well. A smoothly planed strip of hard wood of moderate thickness is screwed by the ends to a smooth board, space being left between the two to allow the sheet of card to be inserted. The edges of the strip and board must be flush with each other. One of the ruled rectangular pieces is inserted in the opening and pushed through until the first ruled line is exactly under the front edge of the wooden strip. The projecting edge of card-board is then bent down with the thumb nail, and the fold made smooth with a paper-knife. The card-board is then pushed forward until the second line is in position, and the second fold made as before, only this time the card is folded upwards. In this way all the folds are made, alternately up and down. Care should be taken to mark the top of the rectangles so as to reverse the folds. If, for instance, the two smaller rectangles begin with a downward fold, the two larger ones must begin with an upward fold, since the folds must alternate. When the rectangles are all properly folded, the material with which the bellows is to be covered—leather, rubber, or thin black cloth of close texture—is cut out to form a rectangular piece, slightly longer than the length of the Bristol, to allow for folding in at each end when the bellows is fastened to the camera, and wide enough to reach completely around the rectangle, A, B, C, D (Fig. 1), allowing an excess slightly greater than four times the length of the diagonal, M, N.

The stuff is tacked lightly to a smooth board, and the rectangles of bristol are pasted to it, as indicated in Fig. 4, the first rectangle projecting over the end of the stuff by half its width. The space between the rectangles, which are pasted on alternately, that is, a large one and then a small one, is equal to the diagonal, M, N. Care should be taken that the tops of the rectangles are in a perfectly straight line. The best paste for cloth or rubber is made by boiling one part of starch and two parts of flour in a minimum of water until it becomes semi-transparent, and thinning down with a weak solution of glue. When leather is used, glue or book-binder's paste should be employed. The cover and one side of the rectangles are covered with the hot paste and pressure applied to secure perfect adhesion. Bands of thin, black paper are then glued over the spaces between the rectangles, and finally a lining of thin, black cloth is pasted over the whole. When dry, the material is removed from the board and the ends and edges trimmed smoothly with the scissors.

To fasten the edges of the bellows, the long rectangular piece is folded in such a way as to have two of the card-board rectangles beneath and above the half-pasted rectangle and the last rectangle with the projecting end of the cover. A sheet of paper is placed between the two parts of the bellows to obviate any danger of their being glued together. The lower piece of cloth and the bristol are covered with paste and applied to each other, leaving the proper space between the edges of the two rectangles, which is then covered with a strip of black paper as before. Lastly the end of the other piece of cloth is pasted to the opposite side of the bristol.

After drying for a short time, the bellows is opened out and will be found to have the form of a rectangular parallelopiped. The making of the folds must be done while the paste is still soft and moist. The manner of making the folds is shown in Fig. 6. The first top fold is made with the finger and thumb of the right hand, and at the same time the first bottom fold is made with the left hand. This fold is carried completely around by turning the bellows, and the operation is greatly facilitated by the preliminary folding of the bristol. In this way each fold is made successively until the whole is properly folded. This part of the work is terminated by pasting together the two least folds, as shown in Fig. 8. The bellows is allowed to dry half opened.

Conical bellows are made in the same way. Two plans, one for each end, are drawn as in Fig. 1. The dimensions of the two ends of the bellows are determined from these plans, and the other measurements from the length of draw. With these as guides four trapezoidal figures are drawn on bristol board and the transverse lines for the folds are drawn in. The folds are then made as before, and the boards pasted to the cover, as shown in Fig. 7. The final folding requires rather more care than with the square form, but presents no great difficulty. It is better, perhaps, to begin the folding at the large end, as shown in Fig. 10.

The best method of fastening the ends of the bellows to the camera is to use inner frames of stout zinc, the exact size of the inside of the bellows. The outside edges of the bellows are covered with stout glue and the zinc frames screwed tightly home, thus forming a strong clamp which holds the bellows firmly in place.

Having made several bellows on a plan similar to the above, I can recommend it as an efficient and not over-complicated method of making this essential part of the photographic outfit.

W. H. B.

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The Story of a Camera.

By W. H. Burbank.

FEW camerists are aware of the careful thought and workmanship involved in the production of a high-class camera. A visit to a large camera factory is one well worth making as a help to the understanding of the many fine mechanical details which enter into the construction of a first-class instrument.

The mechanical plant of such a factory is an important item of cost. In order that a large number of boxes may be turned out all with interchangeable parts, machines must be made to take the place of hand labor, so far as possible. All the stages in the process of manufacture must be carefully attended to in order to avoid waste of material, labor, and time. Each one of a thousand similar parts must be exactly alike, in order that the time and labor of fitting and setting up may be reduced to a minimum.

There are several large camera works in the United States, which turn out as fine work as can be found, but the enlarged factory of the Blair Camera Company, beginning at No. 471 Tremont Street, Boston, Mass., is probably the largest and most completely appointed in the country.

The Company, under another name, began business in a modest way in 1879, with the manufacture of a convenient and compact viewing box called the "Tourograph," now almost unknown to the camerist of to-day. The success of the first season's work encouraged the Company to enlarge its facilities and to add other styles of cameras to its list, all of which met with a ready sale. Increasing business brought with it the necessity for greater facilities and additions were made to the original plant from time to time until at present the factory occupies four floors of a block extending from

471 to 477 Tremont Street, and gives employment to over one hundred persons.

Such a growth as this must have a foundation of solid merit to make it possible, and the success of the Company has unquestionably been due to the unvarying excellence of its products, which in turn is the result of careful planning, the employment of the best material, and the most improved machinery.

A recent visit to the factory disclosed much that is of general interest. Here we saw cameras in all stages of construction. At the time of our visit a large part of the working force was engaged in turning out that popular hand camera, the Hawk-Eye, and we propose to tell the story of its manufacture from beginning to end.

After the working model has been made complete and thoroughly tested under trying conditions, then the tools which are to be used must be made specially for the work. The Blair Camera Company make all their own special tools, both for wood and metal work, and as there are no less than eighty separate parts in the Hawk-Eye, it will be seen that quite a number of different tools are required to make it alone.

In starting to follow a camera through the different stages, the lumber room is the first place to be visited. Here we find a large stock of carefully selected and seasoned lumber of different woods used in camera making. Honduras mahogany and cherry are the woods most in use for plate holders and finest grades of cameras. For the Hawk-Eye a lighter wood is used. The wood is thoroughly seasoned before coming to the factory; but there are drying rooms at the factory where it is again dried after being cut up and run through "jointers" and "planers," which work the material up into some likeness to the finished parts. After this stock has reached the desired stage it is taken to the heavy milling department where it is again cut and milled, making it ready to be glued; this done, it is sent to the gluing department, and after being put through this process the parts are taken to the light milling department where other machines smooth the wood and bore the holes for the numerous brass fittings used in the working parts.

While this part of the work is going through "the mill," the metal trimmings are being made in the metal working department—some from solid brass rods on machines of special construction, and some stamped out; all so carefully made as to leave the parts in condition for attaching to the camera without the necessity of hand finishing, which would make it impracticable to place the Hawk-Eye on the market at the price it is. Here we saw skilled workmen turning out large quantities of the brass fittings which play so important a part in the working of the Hawk-Eye, and each part the exact duplicate of the others.

At one of the machines the workman was engraving the figures on the metal scale which indicate the focus of the lens at different distances, using a lever working on the principle of the pantograph. A fine steel point on the end of the lever was made to follow lines engraved in the brass guide plate, and this motion was communicated to a rapidly revolving drill which engraved the letters, on a reduced scale, on the focusing plate. Another workman was stamping out the brass handles for the revolving shutter setting attachment. In a room located close to the roof, to gain good ventilation by means of heat and acid, the oxidizing and plating is done.

When all the parts, both wood and metal, have been worked out and finished they continue on to the assembly room where they are sorted and placed in the hands of workmen who do the setting up. Here the lenses, finders, and bellows are put in place.

The cases which are to be covered with leather go to the department which contains all this class of work. In this department we saw bellows of all sorts in different stages of construction. Here also are bound up the thousand of Hawk-Eye hand books and catalogues which are printed in another department of the factory.

The cases which are simply to be finished in the natural wood are sent to the polishing department where they are finished in hard shellac.

Another interesting department is the lens grinding department, for the Company make many of the lenses which are fitted to their instruments. The room is in charge of a thoroughly competent superintendent who calculates the curves of the lenses and keeps a watchful eye on the grinders and polishers, doing the finer parts of the work himself. The lenses made here will compare favorably with those whose mounts bear the names of more noted lens makers.

Another important department is the one devoted to plate holders. Here are made the thousands of double plate holders necessary to supply the large demand, and by the aid of cunningly devised and rapid running machines, a large number are turned out every working day.

The bench room where the cameras are set up, and the polishing room, where busy workmen hand polish the finer grades of boxes such as the English Compact and the Champion, present an interesting sight to one who is interested in fine mechanical work, and the visitor is impressed with the scrupulous care bestowed on the most minute details that there may be no chance for flaw or imperfection.

An important adjunct to the factory is the printing department where a large Prouty press is kept constantly at work and fonts of type are being put into condition to run out the printed matter which the Company finds necessary in the various departments of its business.

Many other interesting features were noticed, but nothing was more striking than the careful attention to detail noticeable in every department. Each department as well as every workman is known by a number, and each one of the many different parts used in the construction of the many cameras made in the factory has a distinguishing number, by which stock requisitions are made on the proper department. All work sent from one room to another is credited to the former and debited to the latter, a method which greatly simplifies the labor of keeping track of the large amount of finished and unfinished material in the factory at any given time.

The signs of a carefully planned and accurate system are everywhere apparent. The great success of the Company is undoubtedly due to this careful subdivision and systematization of labor and to the scrupulous attention to every stage of the work with which the visitor cannot fail to be impressed.

In an adjoining building which has space sufficient to prevent the excess of dust and dirt, the developing, printing, and the chemical department is located, where the development of plates and films and printing for amateurs and the trade goes on, as well as the many brands of chemicals, developers etc., are compounded, bottled, and labeled.

The office and ware rooms are on the second floor and an inspection of the outfits here displayed is sufficient to convince one that for adaptability of means to ends, for finished workmanship and excellence of design, the products of this typical American factory are inferior to none and superior to most.

WOMAN'S WORK.

EDITED BY MISS CATHERINE WEED BARNES.

Illustrating Poems by Photography.

[Read before the Society of Amateur Photographers of New York, June 10, 1890.]

AS THE Venus of Milo stood before her sculptor-creator saying to his inner consciousness, "You have made me visible to men, but among them as on Olympus, none shall question my sovereignty," so Poetry says to her various adorers, "No one shall be able to say he has sounded the depths of my soul." One approaches nearest her inmost shrine in closely following Nature, and it is the part of true wisdom to study her under all the ever-changing conditions of life with a reverant worship which will richly reward every faithful worshiper. Not to those who deny her power, or to those who try to force themselves into her most sacred penetralia, are its mysteries discovered, but to those who in spirit and in truth wait before her altar. Painters and sculptors have sought through all ages to reveal Poetry by means of form and color with all the varying expression of her changeful features, but there is no reason, it seems to me, why among those who seek to translate into visible shape her spiritual beauty only those should be numbered to whom heretofore the world has given the name of "artist." Why should the fact of using brush or pencil pre-suppose in its user the possession of artistic power or appreciation? The world does move and people are beginning to understand that after all it matters little what tools are used, if into the finished work is breathed the breath of artistic life. Our friend, Dr. Emerson, seems to think that by the blending of art and science in photography each is thereby weakened, that each should keep to its own sphere. Is it not possible to study science in this connection as one does the steps in dancing, very important to follow closely at first, but gradually becoming a second nature, so that one, so to speak, forgets the letter in the spirit? Let your work be so much a part of you that while not conscious of moving according to fixed rules you are nevertheless largely guided by them.

Travelers abroad can purchase the poems of Scott, Burns, or others, illustrated by photographs of scenery and buildings, but few and far between are the photographic illustrations designed specially to bring out the spirit of the poem as the painter or etcher designs his special work. The photographer must of course labor within limits, but I believe they are more flexible than generally supposed. While it is not always possible to make one's model fit the picture, it is possible to make the picture fit the model. In other words I believe that, after careful choice of lines to be illustrated, the intended picture should be evolved from one's brain by thinking of it, brooding over it, dreaming of it, until all is ready for the realization. Take plenty of time to absorb into your very soul the thoughts of the poem before you. Then carefully decide on the accessories, and, if practicable, discard those which are readily recognized as being in ordinary studio use. Have real curtains, chairs of wood or brass, or other material not made to simulate something else. I make an exception in favor of using artificial flowers and vines, but sparingly. If the operator is not a carpenter, one can be found to construct temporary doors and windows. They are better than the painted article, and *papier-maché* is so glaringly a false deceiver. If the deception could be well done, it would be allowable, but the average rocks, walls, trees, etc., are only too visibly unrealities. These things need not be necessarily expensive if the camerist is possessed of dramatic taste and is something of a mechanic. The professional is usually assisted during an exposure by some one to focus while he is posing and has everything ready for the work, while the amateur portraitist has to be almost omnipresent, so that he works under much greater difficulties than his professional brother, and if he did not really deserve the name "amateur," never would have courage and patience to continue; but the camera fever when it reaches a certain stage is incurable.

It should be the exception when pictures of outdoor scenes are taken by in-door light, even the light of the studio. It conveys a wrong impression to the uneducated eye and, in the branch of photography under consideration, does more harm than good. There is no need either of all the pictures being made in the studio. We are constantly seeing in such magazines as

Sun and Shade charming bits of landscape that would admirably suit certain poems. But where interiors, fancy figures, or portraits are needed, the studio is the best place wherein to make them. No hard or fast rule can be laid down on the mode of studying out or realizing illustrations. To a great extent the artistic operator must be a law unto himself or herself, but, while working within limits, I believe in stretching them as far as possible and taking advantage of everything within them. If the model when found does not entirely suit the character desired, it is often well to slightly vary one's conception of it and gain thereby, it may be, a finer effect than the one intended. There should be, and I say it from experience, a magnetic relation between sitter and operator, their minds should work together, and the words to be wrought out in the picture should occupy their thoughts for the time being to the exclusion of all else. As the actor or opera singer best realizes a character by utter forgetfulness of self, so ought the ideal sitter to think so fully of the part to be represented that the idea never occurs to him or her that it is a "portrait" which is being taken. "You are only a part of a whole," I say, in such cases. "It is not you any more than the chair you sit upon that is being photographed."

It requires a certain amount of histrionic ability to sit for an ordinary portrait, but infinitely more for an ideal subject. This is not common, but where it exists the camerist can be sure of extra credit which should be shared with the sitter. The various difficulties incident to taking small heads or figures greatly increase when it comes to taking large ones and, justly, the camerist who takes good ones is proud of them. Do not try to get a *likeness* of your model, the point is to have the picture tell a story. Make it do that at any cost, and it matters nothing at all if the face is not shown or is utterly unrecognizable. Let imagination dominate your thoughts and your work will have originality, character, not be like that of any one else. This means, however, putting enough labor and thought on one picture to take a dozen ordinary portraits. · The artistic camerist should also bear in mind by what process his work will be reproduced and keep that thought ever before him from the instant of exposure until the negative is developed. Training in some branch of art is capital preparation for illustrating, and every picture designed is an education for the next one. The eye becomes more and more accustomed to realizing in a picture certain stanzas or lines, and new ones will be constantly suggested.

There is one point more that I never have heard mentioned. In taking an interior for illustration, if done in the studio, it is possible to arrange a ceiling over the sitter, so that the effect of a room can be better preserved and the light come as it naturally would do, from the side. It is a good plan also where an outdoor scene is desired, to arrange either by means of a mirror or water in a tank to simulate a stream or lake and prevent reflections from the roof by stretching painted canvas over it.

Such competitions as those of the National Photographic Association of America are and should be a great stimulus to artistic ambition, but I think it unfortunate that the smallest required size for the grand prize pictures is larger than any generally used by amateurs, as it doubtless prevents many of them from enjoying the benefits of such competition. Every inch increase in the size of the plate necessitates so many changes in one's outfit, from lens to developer, that a heavy majority of the amateurs are, per force, ruled out. This subject of illustrating poems is destined to bring about some striking changes in the world of art, and "weary, stale, flat, and unprofitable" will gradually seem to the ambitious amateur all other branches of camera work. It is inconceivably fascinating and one's brain becomes bewildered at what seems to be its destiny. The various new and beautiful reproducing processes constantly claiming attention seem created for this very purpose. The camera has a wonderful feature before it and you will need all the inspiration you can possibly gain in entering a field of work filled with so many opportunities, but which others claim to have owned long before you.

Remember first, last, and all the time these words from Longfellow's "Kavanagh": "We judge ourselves by what we feel capable of doing, while others judge us by what we have already done."

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THE

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EDITORIAL COMMENT.

Hints on the Selection of Lenses.—Mr. J. K. Tulloch recently read a paper on the "Selection of Lenses," before the members of the Dundee Photographic Association, which contains so much sound advice that we give a *résumé* of its contents for the benefit of our readers. Four classes of photographic work are most affected by the amateur, viz.: Landscape, pure and simple; architecture, including interiors; instantaneous work, and portraiture. Since there is no lens which will give the very best results in all these classes, it is necessary to have a "battery" of several lenses, if one wishes to be prepared for all emergencies. The usual make up of such a "battery," when expense is not considered, is a single or rapid rectilinear for landscapes, a wide angle for architecture and interiors, and a quick working doublet for portraits and instantaneous work. The expense of such a "battery" is prohibitive for many amateurs, and, according to Mr. Tulloch, it is entirely unnecessary. He recommends for a half-plate box a wide-angle rectilinear of about four and one-half inch focus. This makes a good lens for interiors and architecture in confined quarters. The component parts of the combination will probably have focal lengths of about eight and ten inches. By using either one of the combinations as a single lens, we have two good landscape lenses of different focal lengths, thus giving us practically three lenses. The objection to this form of lens is its comparative slowness, but this is more theoretical than real, since with our modern rapid plates any good wide-angle, or either of its parts, is quick enough for shutter work and portraits, but in order to remove this objection to his system, Mr. Tulloch advises the addition of a good plano-convex lens, which he claims is fully as rapid as two-thirds of the best rapid rectilinears. The usual form of the single lens is the meniscus, which gives a flatter field than the plano-convex, but which is not so rapid as the latter, which works with a larger opening, but with a slight falling off of definition at the edges. Thus it will be seen that Mr. Tulloch recommends a wide-angle rectilinear with a focus of about two-thirds the long diameter of the plate, and a simple achromatic plano-convex with a focus about one and one-half the long diameter of the plate. The wide-angle will give three different foci, and the plano-convex a fourth focus for landscape, and at the same time an efficient instrument for the quickest instantaneous work and portraiture. The cost of such a "battery" would not be excessive, and Mr. Tulloch's recommendations seem to be well founded. For several years we made use of such a "battery," with the exception of the plano-convex, for which we substituted a long focus meniscus, and we rarely failed to obtain the picture we wanted for lack of a suitable lens. The plano-convex lens we have never tried, but there would seem to be no optical reasons against its use for the purposes mentioned.

A French "Union of Amateur Photographers."—Three French journals, *Paris Instantané*, *L'Amateur Photographe*, and the *Bulletin des Sociétés Photographiques de France*, have taken in hand the formation of a general union of amateur photographers, both French and foreign, for the better promotion of the practice of photography. We have mentioned the advisability of such an organization of American amateurs on several occasions, but without arousing any great enthusiasm for the project. Now that one of our prominent amateurs has interested himself in the matter, we hope to see something definite result. As a possible help in this direction, we add a few extracts from the constitution of the French "Union," taken from the *Bulletin des Sociétés Photographiques:*

> ART. 4. Any amateur, French or foreign, shall be eligible to membership, on presentation of a formal request for membership, endorsed by a member and signed by the council.
>
> ART. 5. The object of the Union is the study and development of photography in its numerous applications in art, science, and commerce.

For this purpose the Union will hold occasional meetings and public exhibitions in the principal cities; establish photographic clubs in towns where there are a sufficient number of amateurs; secure for its members the use of dark-rooms and sky-lights; organize outings, hold lantern exhibitions, etc.; answer questions on photographic matters; establish a special department for the exchange of prints between members of the Union at home and abroad:

ART. 10. The direction and administration of the association shall rest with a council of twelve, elected by the members. They shall hold office for three years, and one-third of the council shall retire from office each year.

ART. 11. The council shall elect annually from its members a President, Vice-President, Secretary, and Treasurer, who shall have such powers as may be delegated to them.

ART. 14. The management of the association shall rest with the council.

ART. 16. A general assembly or convention shall be held annually.

ART. 18. The Union shall publish all proceedings, communications, etc., in the official organs.

ART. 20. The annual dues shall be three francs for members of photographic clubs, and five francs for unattached amateurs.

ART. 23. The Union offers its members the following advantages: Free participation in all meetings and exhibitions; publication of prints approved by a special jury, and of all those awarded first prizes at exhibitions; free advice, in person or by letter, on all photographic and related subjects; advice concerning the purchase of outfits and accessories.

It would seem that there is ample room in America for an organization on these lines, and we shall be pleased to do all in our power to aid the cause.

Rossignol's Mixed Hydro and Eiko Developer for Short Exposures.—

Boiling water,	10 parts.
Sulphite of soda,	1 part.
Eikonogen,	0.15 parts.
Hydroquinone,	0.05 parts.

Developer.—Add 75 grains of carbonate of soda to 4 ounces of the above.

Steiglitz' Platinium Toning Bath.—

Chloro-platinite of potash,	30 grains.
Oxalate of potash,	480 grains.
Phosphate of potash,	240 grains.
Distilled water.	10 ounces.

Matting Lantern Slides.—A reliable universal form for cutting out openings of various sizes and shapes in slide mats is still a desideratum, notwithstanding the fact that there are one or two mat-trimmers in the market. Without wishing to reflect upon their usefulness, we may express the wish that some ingenious amateur would give us some better way. A fairly satisfactory method is to keep a stock of strips of thin black paper of various widths, and to gum these to the face of the slide as the subject may require, care being taken to make perfectly square corners. Another method, which does away with the square corners, objectionable to many, is to cut a piece of thin hard card-board to the size and shape of the opening and bend it over squarely across the middle. The mat paper is cut to size, folded across the middle and placed between the two halves of the doubled card-board, which acts as a clamp. The opening is easily cut out with a pair of sharp scissors. Cards of various sizes and shapes are easily made, or thin sheet brass may be used.

Development of Wet Plates.—As some of our readers may be led by Dr. Borden's article, published in our last issue, to take up the wet plate process for slide making, we wish to warn them against pouring the developer on the plate too forcibly. The result of such treatment will be the washing away of the silver from the portion upon which the solution falls with greatest force, and a consequent lack of density. Mr. A. W. Scott gives in the *Beacon* for June the following directions for development: "In proceeding to develop, pour sufficient of the solution into a small tumbler and take the plate between the thumb and first finger, as when coating it with collodion, but lowering the left and right off corners slightly. Then in a gentle stream, passing the cup from left to right along the upper or near edge, pour sufficient of the solution to fully cover the plate, but not more, and as it reaches the lower or off side, bring the plate sharply to the level, or a little beyond it, so as to prevent any of the solution running off."

For the benefit of those who may not care to make the collodion, we may say that we have lately made quite a large number of remarkably good slides with Anthony's negative collodion, which is still an article of trade and may be obtained of most dealers. For copying, nothing can surpass the wet plate in quality and cheapness, and we strongly urge our readers to make a trial of it.

Pictures Received.—Mr. L. Allison and Dr. Geo. L. Sinclair have favored us with examples of careful camera work, consisting of views in Nova Scotia and New Brunswick. Dr. Sinclair is an adept at winter scenes, and Mr. Allison has caught and rendered well many picturesque bits of natural scenery.

Impervious Card-board.—Mr. Friese Greene has recently taken out an English patent for a new process for making card-board impervious to the various solutions used in photography. According to the specifications as published in the *British Journal* the cards are first treated in a mixture of one part of strong sulphuric acid and two parts of water, in order to destroy all surface organic matter. After washing in clean water to remove the acid, the cards are made impervious by coating with a mixture composed of turpentine, oxide of zinc and gold size, which is made by pouring three weighed parts of turpentine over one weighed part of oxide of zinc, and adding gradually and with constant stirring, one part by weight of gold size. The coating may be done with a brush, and the cards when dry will be impervious to photographic chemicals, and may be used for a variety of purposes, such as a basis for sensitive films for positives, the collotype process, etc. When the cards are of specially good quality, free from chemical impurities, the treatment with sulphuric acid may be dispensed with.

Mr. Thomas H. Bolas, our English correspondent, sends us a list of papers involving original research published by him in various scientific journals, to which is added a list of other works partaking more of the nature of compilations. The titles of the subjects show Mr. Bolas to be an investigator of many difficult chemical problems. He has a completely appointed laboratory at No. 8, Grove Terrace, Chiswick, London, and our readers may expect notes on the results of his photographic investigations which will be of great value.

A Correction.—In our announcement of the Selma Camera Club last month the names of the officers were incorrectly given. Mr. Watkins Vaughan is President and Mr. S. Orlando Trippe, Secretary and Treasurer.

A Promising Photographic Field.—Amateurs are constantly seeking new fields where they may steal a march upon their fellow-amateurs, and this they can do only by avoiding the beaten track where so many have been before. Few places so easy of access afford so much picturesque material as Eagles' Mere, Pennsylvania, on the summit of the Alleghanies. A charming mountain tarn, surrounded by green and wooded shores, dotted with boats and reflecting the mountain peaks, fed by rippling streams which abound in cascades; animated groups of tennis players, all combine to tempt the camerist to do his best to catch the beauty and life of the scene. One of the proprietors of the hotel is an ardent camerist, and has had a dark-room built for the convenience of the guild.

The Convention at Washington.—The Photographers' Association of America will hold its annual convention at the Smithsonian Institute, Washington, August 12th to 15th inclusive. The grand prize is offered for the best print from a negative suggested by Tennyson's "Enoch Arden." During the convention week the memorial to Daguerre will be unveiled.

Vienna Photographic Salon.—The Amateur Photographic Club of Vienna announces an exhibition under the above title, to be held in the Imperial Austrian Museum of Art and Industry, in April, 1891. The leading idea seems to be to collect the best works of the best photographers from all countries. A jury of competent artists and photographers will decide upon the admission of the pictures. It is probable that all awards and charges for wall space and carriage will be done away with. This seems to us to be a step in the right direction, and one which the managers of the "Joint Exhibition" might well consider. If we had in America a dignified "Photographic Salon" with a competent jury, in which the only prizes should be the distinction of being admitted to the walls of the "Salon," we believe that our art would be greatly advanced. "Art for art's sake" should be the inspiring word for every camera lover.

A New Eastman Factory.—We learn that the Eastman Company are contemplating the immediate erection of a factory in Rochester which will employ one thousand hands. This reads like a romance, but the demand for Kodaks and the new film must be something enormous.

Hand Cameras.—Many of our readers have doubtless made hand cameras from their own designs, or have ideas concerning them. These we would be pleased to publish for the benefit of our readers, if descriptions and working drawings are sent to us. In our August number we hope to publish a description of a cheap and easily made magazine camera, which will be of interest to many who are about to invest in a box of this class.

The members of the Providence Camera Club have had a singular experience with eikonogen. Stock solutions stored in glass-stoppered bottles in the lockers of the dark-room deteriorate badly within twenty-four hours, while the same solutions retain their good qualities for weeks in the private dark-rooms of the members. This opens up an interesting question, and one that we would like to have satisfactorily answered. It may be that the large number of different chemicals kept in the club lockers may be responsible for the trouble, or there may be some peculiar atmospheric conditions present, or, as Mr. Davison suggests, the trouble may be caused by the fact that the dissolving key of the stereopticon is kept in the lockers. Any one who has had any experience with dissolving keys knows that there always hangs about them a strong odor of gas, the presence of which may have caused the mischief. Eikonogen has as many moods as the fair sex is credited with, only in the case of eikonogen they are not always charming.

Photography in Natural Colors.—*Le Moniteur* states that at a recent meeting of the Photographic Syndicate, M. E. Vallot exhibited a good photograph in natural colors, printed from a colored picture on glass. The method is thus described: Thick photographic paper is floated for three minutes upon

Water, ...	100 parts.
Chloride of sodium, ...	20 parts.

and dried quickly. Sensitizing is done by floating the dried sheet for five minutes on

Water, ...	100 parts.
Nitrate of silver, ...	10 parts.

It is then well drained and washed for ten minutes in running water. In order to remove the last traces of the nitrate, the paper is now placed for five minutes in

Water, ...	100 parts.
Chloride of sodium, ...	20 parts.

and washed for a few moments. The next step is to form the violet modification of chloride of silver. This is accomplished by exposing the paper to the action of light in a bath containing 500 parts of water and 20 parts of the following bath:

Distilled water	100 parts.
Protochloride of tin	3 parts.
Sulphuric acid	10 drops.

The paper is exposed until it assumes a deep violet color; it is then washed for five minutes and dried. After drying it is washed for five minutes in a solution containing equal parts of the following:

A—Water	100 parts.
Bichromate of potash	5 parts.
B—Saturated solution of sulphate of copper.	

When dry, the paper is ready for exposing. The exposure to full sunlight under a colored painting on glass is not less than three-quarters of an hour. The colors are plainly visible after the exposure, but have a fogged appearance. The print is cleared and the colors made more brilliant by treatment with

Water	100 parts.
Sulphuric acid	20 parts.

The prints must not be left too long in the bath, which at first improves the colors, but afterward destroys them. After a thorough washing, the prints are given a coating of albumen or gelatine to increase the brilliancy of the colors. Nothing is said about the use of hypo or the permanency of the prints, and we give the process for what it may be worth until we have had an opportunity of trying it.

◆

ACID, PHOSPHORIC—$H_3PO_4 = 98$--Prepared either by burning phosphorus in a current of dry air or by decomposition of an acid phosphate. Exists as a hydrate, or hydrate called glacial, produced by the addition of water. Has been lately highly recommended as an addition to the pyro developer, as producing very clear, crisp negatives, and giving good graduations of tints.

ACID, PYROGALLIC--$C_6H_6O_3 = 126$--Strictly not an acid. Pyrogallol is produced by the action of heat on gallic acid. In large quantities by heating a dried aqueous solution of nutgalls in an iron pot covered by a paper cap ; it there sublimes and condenses on the cap in long flattened prisms. Soluble in water (1-2), in alcohol (9-10) ; soluble also in ether and glycerine. Dissolves in caustic potash and soda, forming a solution which quickly absorbs oxygen from the air and turns black. It quickly reduces gold, silver, and mercury from their salts, and thus becomes one of the most active agents in the developer. As it rapidly oxidizes and is difficult to preserve in solution, many substances have been recommended as preservatives —mixtures of glycerine and water, formic acid, metabisulphite of potash, phosphoric acid, citric acid, sulphite of soda, and some of the mineral acids. It is the bane of the silver printer, and, therefore, should be excluded from it when either silvering the paper, printing, or toning is done.

ACID, SALICYLIC—$HC_7H_5O_3 = 138$—Found in the free state in the flower of the meadow sweet, and as a methylic ether in the oil of wintergreen, from which it may be obtained by distillation with potash. Obtained commercially by heating carbolic acid with caustic soda and passing carbonic acid gas into the mixture. Soluble in cold water (1 to 700), boiling water (1 to 9), alcohol (1 to 4) The addition of an equal quantity by weight of either borax or acetate of potash greatly increases its solubility in water. It is recommended to give increased sensitiveness to dry plates, addition to hydrochinon developer to prevent the formation of mould, and in combination with soda as a preservative for mountants.

ACID, SULPHURIC—$H_2SO_4 = 98$—Oil of vitriol. Prepared by burning iron pyrites, poor copper ore or zinc blende, and oxidizing, forming a definite combination of 40 parts of sulphuric oxide and 9 parts of water. It is a colorless, oily liquid, having a sp. gr. of 1·85, intensely acid taste and reaction, rapidly charring organic matter. When taken internally, undiluted, very poisonous ; antidote the same as for nitric acid. It has a most energetic attraction for water, withdrawing aqueous vapor from the air, hence a very good drying agent. When diluted with water, great heat is evolved ; so the mixture should be made with caution. Acting with avidity upon the metallic oxides, it readily converts them into sulphates—a very important class of salts, most of them soluble in water, but not in alcohol.

Acid, Sulphurous—$H_2SO_3 = 82$—Prepared either by heating sulphuric acid with metallic mercury or copper clippings, or by heating concentrated sulphuric acid with sulphur; by these means a very regular evolution of sulphurous oxide is obtained. It is a colorless gas, having the peculiar suffocating odor of burning sulphur. It quickly extinguishes flame and is irrespirable. Cold water dissolves more than thirty times its volume of sulphurous oxide, forming sulphurous acid or hydrogen sulphide, and which may be kept so long as air is excluded. The access of oxygen gradually converts it into sulphuric acid. It is much used in the arts for bleaching woolen goods, straw plait, etc. The sulphites are easily formed by direct combination. Sulphites of the alkalies are soluble in water, while the sulphites of barium, strontium and calcium are insoluble in water—sp. gr. 1·040. It is recommended as a preservative of pyro, and has been prominently brought forward by Mr. F. C. Beach as one of the important ingredients of his developer.

Acid, Tannic—Tannin—These substances constitute the astringent principles of plants, and are widely distributed in the vegetable kingdom. Most of them are glucosides of gallic acid Gallo-tannic acid, on the other hand, is, when quite pure, not a glucoside, but consists of digallic acid or tannin—$C_{14}H_{10}O_9$. It occurs in large quantities in nutgalls, especially in the Chinese variety, also in sumac, rhus coriana, in tea, etc., and is most readily prepared by exhausting finely powdered nutgalls with a mixture of alcohol and ether in a percolator. The liquid which collects in the receiver consists of two distinct strata. The lower, which is almost colorless, is a very strong solution of almost pure tannic acid. Tannic acid is soluble in water and alcohol (10 to 8), sparingly soluble in ether. Is used in many of the photographic processes, more so formerly than now.

Acid, Tartaric—$C_4H_6O_6 = 150$—There are four bi-basic acids included in the above formula, distinguished from each other by certain physical properties. The ordinary tartaric acid, which is the acid of grapes, tamarinds, pine apples, and several other fruits, in which it occurs in the state of an acid potassium salt. Calcium tartrate is also occasionally met with. The acid of commerce is wholly prepared from tartar and argol, an impure acid potassium tartrate, deposited from grape juice in the act of fermentation, by precipitation by chalk and subsequent treatment with sulphuric acid, thus forming a sulphate of calcium, which liberates the tartaric acid. It crystallizes in large transparent prisms, permanent in the air, and inodorous. It dissolves with great facility in both hot and cold water, and is also soluble in alcohol. The solution has a pure acid taste and reddens litmus strongly. In photography it is used instead of citric acid in the developer, and as a preservative for sensitized paper.

ACTINIC—Applies to those portions of the sun rays by which chemical changes are effected, in contradistinction to those which are heat and light visual. The actinic portion of the spectrum is said to exist in the ultra-violet, violet, indigo, blue, and green, and not in the yellow, which appears to our eyes to be the most powerful. Some claim that this division is purely arbitrary, as it depends solely upon the substance exposed as to which rays are actinic or non-actinic. But it appears as if there are vibrations of a certain velocity which could commence an action, and that there are others which are devoid of the property of commencing, but can continue and complete an action once set up. See Becquerel's and Mosei's experiments. Actinic focus of lens—refer to focus.

ACTINO-HYDROMETER—An instrument generally used to test the strength of the silver solution. Although it is strictly correct in the testing of pure silver solution, it is unreliable when these solutions have been in use some time, for the older the bath, the more impure the solution, and hence the errors. Dr. Vogel's silver tester or W. H. Giles' volumetric silver test obviates these difficulties effectually.

ACTINOMETER—Any instrument by which the chemical, non-visual rays of the sun can be measured. Usually it consists of sensitive paper which can be exposed to the light in small portions at a time, and the time which it takes to darken to a standard tint will be found to bear a distinct relation to the necessary exposure for a sensitive film, whether upon glass or paper. Allowance, of course, to be made for the presence of any object of importance near the foreground of the picture. The sensitive paper used should be of the same general character as the sensitive film of the plate to be exposed. One form of an actinometer is easily made by soaking a strip of gelatino-bromide paper in a 2 per cent. solution of nitrate of potash, drying it in the dark, and when dry rolling it and confining in a light-tight box. A modern pill box, with a slot cut in the side to draw the paper slip through, does very well to permit its exposure to light and comparison with a standard tint. The latter to be obtained by exposing a plate or a subject, the proper exposure of which is known, and at the same time exposing the sensitometer and noting the time of the darkening of the paper to a certain tint. Should the correct exposure be three seconds, and it takes thirty seconds to darken the paper, therefore divide the actinometer time by 10, and you will have about the correct exposure with a certain slip and class of pictures. Mr. G. W. Cobham has published a certain set of rules for this kind of actinometer which are very ingenious, but at the same time rather complicated for the ordinary amateur, as they necessitate, if several lenses are used, much measuring of the lenses and the sensitiveness of each band of plate to find a constant for that special band. As each emulsion differs, to be absolutely correct, it, of course, should be tested. There is another form of actinometer, which is as follows: A strip of paper, tracing thin, is divided into ten spaces, and number or letter each space—so:

1	2	3	4	5	6	7	8	9	x

Write the figures or letters with good black ink, and then cut other strips of the same kind of paper the same width. Place the numbered piece of tracing paper upon a strip of clear glass slightly wider and longer, then place thicknesses of tracing paper over these numbered strips, so that 2 will have 1, 3 will have 2, 4 will have 3, and so on. When the necessary number of strips are in place, another strip of glass is placed upon them and the two bound together with a paper edge. The sensitive paper can be exposed under this and the time noted. This form is far from being accurate, for a great deal of light is absorbed by passing through each layer. If one layer of paper will absorb $\frac{4}{5}$, so that only $\frac{1}{5}$ passes through, two layers allow the passage of only $\frac{1}{25}$, three layers $\frac{1}{125}$, and so on. The above figures then would represent the actinic effect of the light under the different layers, and by no means by that represented by the numbers 1, 2, 3, 4, etc., as might at first appear; and the higher the figures, the greater the difference.

AERIAL PERSPECTIVE—A term used strictly to designate the changes made in the appearance of objects by the interposition of the atmosphere. For, should the atmosphere be deprived of its means of refraction by means of its clearness, a false representation is produced, the effect of which is that objects appear much nearer than they are in reality. This effect may be produced also either by too short a focus lens, too small a diaphragm, or a very wide angle one. In the latter case the whole scene seems to be produced upon a concave surface, the sides stretched and pulled, and the distance brought almost on a line with the foreground. Also to denote the idea of distance in a landscape or photograph the more remote the object, the lens, like the retina of the human eye, is affected by the visual rays, and hence this idea. To obtain this feature, which gives so much beauty to the photograph, long focus lenses or as large a diaphragm as possible should be used.

AIR—A disturber—It is one of the worst disturbers of the peace that there is. It not only deteriorates the solutions, decomposes and discolors them, but it saps their very strength. Hence it is quite necessary, if not imperative, to protect them against its influences.

AGENT—An active power or cause. That which has the power to produce an effect. For instance, light is the agent which impresses the image upon the sensitive plate, and the developer the agent that reveals that image to our sight.

ALABASTRINE PROCESS—A process resorted to in the days of the old wet plates to improve the color of glass positives. It may be applied to gelatine plates in the following way : Entire freedom from hypo and stains is absolutely necessary. The negative is soaked in clear water till thoroughly moist, and then placed in the following solution : Perchloride of mercury, grains 40, dissolved in drachm 1 of C. P. hydrochloric acid ; chloride of sodium, grains 20 ; sulphate of iron, grains 20 ; distilled water, oz. 2. Allow it to remain in this solution until completely bleached ; wash, dry and varnish mat black varnish or back it with black velvet.

ALBERTYPE—A photographic process named after M. Albert, of Munich. A thick glass is first covered on its polished side by a solution of gelatine bichromate of ammonium and albumen, previously heated. The glass in a horizontal position, the first slight coating is exposed to light to render it insoluble to water ; when dry, another coating is given, consisting of gelatine isinglass, bichromate of potash, and a mixture of resinous matters (benzoin-tolu.) in alcohol. When dry, the plate thus prepared is placed in a printing frame under the negative to be reproduced. After sufficient exposure, the plate is plunged into tepid water, which dissolves the soluble part not affected by light and leaves slightly in relief the part where the light has acted. Dried and rubbed with an oiled flannel, it is ready for inking, etc.

ALBUM—Lat. albus, " white "—Originally a white tablet or register on which anything was inscribed. A blank book especially prepared for the insertion or attaching of photographs.

ALBUMEN A very complex substance existing in many modifications in both animals and plants. The albumen in the white of an egg containing about 12 per cent. can be taken as the type. Its formula may be written $C_{72} H_{112} O_{18} N_{22} S P$ as a general idea of its chemical composition. The blackening of a silver egg spoon proves the presence of sulphur, forming a sulphide, also traces of sodium, chlorine and calcium phosphate are to be found in this compound. The sulphur contained in the albumen may be one of the possible causes of the almost universal fading of prints on albumenized paper. It is very largely used in photography to give a brilliant surface to the paper upon which photographic prints are made. Fox Talbot was the first to use it for this purpose, about 1852. Albumen was the first substance used to form a film in which the sensitive salts of silver could be spread out upon glass. Niepce De St. Victor, about 1847, invented this process by employing albumen. It is still used in ordinary transparencies, etc.

Albumenized Glass—Glass, after having been thoroughly cleaned by a strong solution of concentrated lye, washed, and, while still wet, flowed with a dilute solution of pure albumen. When dry, freed from dust, etc., it is ready to receive the collodion film. Wet plate process, etc.

Albumenized Paper—Paper prepared by coating it with albumen and salt. Such has become the demand for this paper that it is manufactured in large quantities, and it can be procured from the dealers at a less cost than the average amateur or professional can prepare it. Briefly, it is prepared in the following way: Use fresh eggs; each egg to be cracked and emptied into a separate cup, carefully withholding the yolk in the shell to prevent its breaking and mixing with the albumen or white. Each egg of ordinary size yields about 7 drachms of albumen. To 7 ounces of albumen add 60 grains of chloride of ammonium, 90 minims of alcohol, and 14 drachms of distilled water, in the following manner: Dissolve the salt in the alcohol and water, and then add the albumen and beat with a whisk or egg beater for fifteen minutes, allow it to settle and filter through a tuft of cotton wool, which should have been previously well washed with distilled water. The amount passing through the filter will be sufficient for a quire of paper. The paper should be good starch-sized paper. Pour the albumen carefully into a large flat dish, and taking the paper with the two hands by the opposite corners and drawing the hands together will make it to bow out in the middle, which place on the surface of the albumen, and, by gradually lowering the ends, the whole will rest on the albumen. In a few seconds bubbles will appear and make themselves known by numerous puckers in the paper. Lift the paper gently and destroy them by touching them with a wet camel's hair pencil. (*To be continued.*)

ENGLISH NOTES.

BY THOMAS BOLAS.

A Hint on Making Stereoscopic Views.—Mr. Valentine Blanchard, in the course of a discussion at a recent meeting of the Photographic Society of Great Britain, pointed out that the photographers of twenty years ago who made the stereoscopic slides then so much in vogue, generally placed the camera low down, so as to give prominence to a tuft of vegetation or some other object in the immediate foreground, this serving to much enhance the strikingness of the stereoscopic effect. The few stereoscopic workers of the present time seem to neglect this simple expedient for giving that slightly exaggerated stereoscopic effect which serves to emphasize the difference between a stereoscopic combination and a single photograph.

Electric Light for Portraiture.—Some of our London professional photographers have for years past been in the habit of regularly using the electric arc light for portraiture instead of daylight, the certainty of being able to work always under the same conditions of exposure being sufficient advantage to compensate for the expense of the light. The earlier workers with the electric light generally set up their own installations—ordinarily a dynamo driven by an Otto gas engine—and found the certainty in exposure a great advantage after one by variable London daylight; but those who take their current from the various electric supply companies complain much about the irregularity of the light, owing to varying current, and say that it is often impracticable to get a series of anything like uniform exposures, it being far more difficult to judge of variations with electric light than of differences in the actinic quality of daylight.

The arc light is now so common that amateurs often have opportunities of working by it, the principal obstacle to its use by them for portraiture being the large reflecting or diffusing screens ordinarily required, and in the matter of diffusing screens the experience of Mr. Friese Greene will be acceptable to amateurs as well as to professionals. He arranges a number of round glass rods, such as are sold for laboratory use, in a square wooden frame, so that the rods are nearly touching and parallel to each other. A main point in successful working is not to place the diffuser close to the electric arc, but as close to the sitter as is consistent with the extent of the area to be illuminated, and in some cases a second diffuser should be used, it being so placed that its rods cross those of the first. But it does not follow that the two systems of rods should cross exactly at right angles. Mr. Greene's diffusers are easily cleaned and only obstruct about ten per cent. of the light, while ground glass or tissue paper generally cuts off more than half.

Automatic Photography.—An automatic photographic apparatus, which will take and deliver a portrait in exchange for a coin dropped in the slot, is certainly a possibility, as evidenced by the working of the arrangement of M. Enjalbert at the late Paris exhibition, and indeed of other apparatus of similar kind which have been constructed on both sides of the Atlantic; but it is difficult to see how a commercial return should come from the working of such apparatus, when one considers the amount of skilled supervision which would be required. Moreover, it is unlikely the public will be satisfied with such results as can be obtained, excepting while the thing is a novelty. At any rate, a company with a capital of £100,000 has been floated in order to work a penny-in-the-slot system of photographic portraiture, but photographers here look upon the earning of any dividend as being unlikely in the extreme. The shares were eagerly bought, presumably by non-photographic people, and on the representations of a prospectus which was full of statements which photographers would be inclined to look upon as more than exaggerations. Other new companies are being projected for the exploitation of automatic photographing machines, and this will probably go on till the more confiding section of the public ceases to be influenced by the large promises of the promoters.

Thin Transparent Celluloid and its Uses.—Although the earlier experiments on the use of celluloid as a basis for the negative were made in Paris and the first results were obtained there, we generally look on the practical introduction of the celluloid negative as coming from the New World, and now that we have the celluloid negative firmly established on both sides of the Atlantic, it is interesting to note how many uses the photographer may make of the transparent base, a stock of which tends to accumulate when films are soaked off spoiled negatives. Inscriptions or titles may be written or printed on strips of the celluloid film, and these may be laid between the negative and the printing paper, so that the wording appears as white lines on a ground more or less dark, according to the part of the negative selected. Similarly it may be used in making masks, by which a photograph may be made the basis of a New Year, Christmas, or congratulation card. Colonel Waterhouse refers to the use which may be made of the celluloid sheets in making factitious negatives for reproduction by the various photo-mechanical printing processes, as Indian ink can be worked on it with fineness and delicacy, whether pen or brush is used. When matt surfaced—and the celluloid can readily be roughened by friction with the purest emery powder—it will take pencil or crayon tints, and also thin washes of Indian ink. In short, by working on a celluloid sheet an artist can obtain with ease more variety of effects than by any ordinary method of engraving or etching, while any required number of copies may be printed on the usual silver paper or by the photo-mechanical processes. If the artist prefers to make a positive transparency on the celluloid instead of a negative, this positive may be printed from direct by methods which, like the cyanofer process, give a positive from a positive, or a negative may be made from it by contact printing. Such a combination of direct artistic effort and photography is calculated to develop talent in circles of acquaintances or wherever the circulation of results over a limited area can act as an incentive. Such uses of the celluloid as making diagrams or tabular matter for the optical lantern, or covering photographs in albums, are obvious enough, but a less obvious use which I have made of the larger sheets is the formation of light developing trays for use when on a tour—trays so light that four or five placed one within the other weigh only as much as a card mount. The edges of the sheet of celluloid are immersed successively in boiling salt solution, and when softened are turned up to form the disk. A saturated solution of chloride of calcium boils at a somewhat higher temperature than a solution of common salt, consequently more effectually softens the celluloid.

Guaicol as a Developer.—This substance (methylcatechol) has been suggested as a developing agent by Major Waterhouse. Twenty minims of the oily liquid agitated with two ounces of a four per cent. solution of soda crystals, makes a good developer, but slow. This defect, however, can be remedied by using a weak solution of caustic soda instead of the carbonate (soda crystals).

Mixing Gelatine Emulsions.—That a mixture of a large accumulation of experimental emulsions will often average out as a good working sample is quite within the experience of many of the older emulsion workers, and in the *British Journal* Mr. Trail Taylor relates his experience, which is to the effect that a number of experimental samples, many in a state of incipient decomposition, when mixed gave faultless images, although the gelatine basis was a trifle rotten. In the old collodion days many operators used to build up an average collodion by mixing the various commercial samples, and it was contended that greater uniformity was thus attained than by using any one make.

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SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

The Camera Club of Hartford.—The sixth annual outing was held May 30, 1890. Last year the club took a trip, by invitation of the Railroad Company, over the Derby extension of the Housatonic Railroad, and this year a second invitation was accepted to make a trip to some point on the main line of the same road. The little village of Lanesville, near New Milford, was chosen, for here we have the most varied scenery within a comparatively small territory. The weather was all that could be desired and consequently the club turned out in force. Our club sent twenty-eight cameras, with a force of seventy people to operate them, or, to be more exact, twenty-eight to do the operating and the remaining forty-two to look after the operators. The Springfield Camera Club sent a delegation of six; New Britain was represented by a party of seven; New Haven sent fourteen, and Waterbury, five. In all the party numbered over a hundred, with about fifty cameras. The club and their guests took the 8.05 A.M. train to New Haven, where a change was made to the Derby branch of the Housatonic Railroad. Here the Railroad Company had special cars attached to their regular 9.40 A.M. train in readiness for us, and we were soon speeding on our way to Lanesville. On the way the party were regaled with ginger ale, soda, etc., kindly furnished by the officers of the road. Arriving at our destination the question, "Where do we go now?" was heard on all sides. To which the committee made answer: "Wherever you please, so long as you get back at 3.45 P.M.; on the right are New Milford Falls and 'Lover's Leap Gorge,' and on the left you will find Still River and quiet pasture scenes." The majority turned to the right, attracted, no doubt, by the poetical name of "Lover's Leap Gorge." The legend is (of course a legend goes with the gorge) that in by-gone ages an Indian maiden jumped from the cliffs into the river, one hundred feet below, presumably to find her lover. Whether she did or not is an open question. The enthusiastic ones set up their cameras at once and were ready for business, and they did not have long to wait, either, for New Milford Falls was close at hand, as sparkling and smiling in the sunlight as if there was not a camera within fifty miles. And in answer to their broadside of shots he sent back a defiant roar, as if to say: "You can shoot me safely enough with your cameras, but just try it once in a canoe and see what I'd do." All the time the "regulars" were working the inquisitive little Kodaks were snapping, now at the grotesque position of some member of the party, and now at the Falls, in fact at anything and everything. After finishing up the Falls the thoughts of most of the party turned to luncheon, and soon the cliffs on both sides of the gorge were occupied by groups of merry picnickers. Pretty bits of wooded roadway, the rapids below the Falls, two or three picturesque negro cabins, some cows, etc., etc., served as marks for the busy cameras and when the time came to return to the train everybody was tired and dusty but serenely happy in the consciousness that his or her pictures would surely be the star ones of the trip. In all some 450 exposures were made ranging in size from 2 x 2 up to 6½ x 8½, including six Kodaks, two Scovill Detective, and one Tom Thumb camera. The party reached Hartford at 6.50 P.M. voting the most successful outing ever held by the club.

The Society of Amateur Photographers of New York.--Electrically Exposed Celluloid Films. Reversal of Negatives during Intensification.—Since the annual meeting, April 9, 1890, the officers have been busy attending to the moving of the property of the society to the new quarters at 12 West 31st Street. Soon after May 1st, through some disagreement between the Committee on New Quarters and the representatives of the Society of Mechanical Engineers who had formally agreed to lease the basement and top floor to the Amateur Society, a lease satisfactory to both parties was refused. The society of amateurs then obtained a temporary injunction compelling the engineer society to permit them to retain possession of the premises, and brought suit in equity for damages. The case was tried before Judge Lawrence, in the New York Supreme Court of Chambers, who, on June 10th, rendered a decision in favor of the engineer society, and vacated the injunction originally granted. He founded his decision chiefly on the ground taken in a communication written by an officer of the amateur society, that there was no lease and could be none unless certain conditions were enforced. The decision is quite lengthy, and occupies nearly two columns in the New York *Law Journal* of June 11, 1890; it is somewhat singular that it was rendered on the same day that the society held its first meeting (since leaving 122 West 36th Street) in the meeting-room of the American Institute, at 113 West 38th Street, which was kindly placed at its disposal by Superintendent Charles Wager Hull. At that meeting (Tuesday evening, June 10th,) Miss Catherine Weed Barnes read an interesting paper on "Illustrating Poems by Photography." (See page 260.) A vote of thanks was accorded her.

Mr. F. J. Harrison exhibited a new hand magazine camera, very simple in construction and easily worked, which he said was made by Anthony & Co. Mr. F. C. Beach exhibited a sample 8x10 rollable film, which had been placed in an eikonogen developer, without being exposed in the camera. It was covered with outlines of discharges of electric sparks, and was thought to be produced by the separation of the celluloid film from its glass support. The method of manufacture is to put the celluloid film on a sheet of glass, and then to flow the sensitive emulsion over it. When dry the film is stripped from the glass. In certain favorable conditions of the weather, electricity, nearly imperceptible to the eye, is generated at the point of separation of the film from the glass, which affects the sensitive film above, impressing upon it the discharge of the spark. The discharge is so subtle that it is not observed by the attendant, hence the preliminarily exposed film is rolled up and sent to the users without a suspicion that it is damaged. Its character is not revealed until a genuine exposure is developed; then the irregular tree-like effects are plainly noticed in the shadows, and in many cases badly mar the negative. Mr. Beach said that it was a difficulty that the manufacturers were trying to avoid, and no doubt it could be done. But film manufactured in warm or damp weather should be free from the defect and was to be preferred. The specimen exhibited was covered in several places with very distinct electric markings. Mr. G. D. Milburn, who came into the meeting-room soon after Mr. Beach had made the explanation of the cause of the markings, corroborated Mr. Beach, and further remarked that his company thought they had found a remedy, and that all films made within the past two months would not be found electrically marked. He assured the members that the company was doing all it could to manufacture a reliable article.

A negative which had been twice intensified and which presented a peculiar appearance, was also shown by Mr. Beach. It was an instantaneous exposure on a Carbut B plate, and in developing, frilled so much that the hypo, it is supposed, was not thoroughly eliminated from the film. It was first placed in a solution of bi-chloride of mercury until the film was thoroughly whitened, then it was washed, and covered with a simple eikonogen solution, 14 grains to the ounce. This at once blackened the film. But as the intensification was not sufficient the film was washed again, and whitened a second time with mercury, then washed and covered again with the eikonogen. This time the portion of the film near the edges changed to a black, but the center portion gradually changed to a positive. On washing and examining by transmitted light the negative looked the same as by reflected light. Thinking that the change was due to the effect of eikonogen, the Monckhoven cyanide of silver intensifier was tried. The film was whitened a third time with mercury, and darkened with cyanide of silver, but the center portion did not return from a positive to a negative. The plate was then washed and immersed in the hypo fixing bath and the density to some extent reduced, but there was still no change in the positive image. On consulting experts Mr. Beach was unable to ascertain any remedy, and as he had never met with such a case before he was at a loss to explain the cause of the change, unless it was that the hyposulphite of soda was not thoroughly washed out from the section of the film that was reversed. In Dr. Eder's book on the modern dry-plate it is stated that negatives sometimes become reversed during intensification, if the hyposulphite of soda is not first thoroughly eliminated. In view of this it was urged that great care should be exercised in washing negatives prior to intensification. It was a subject that needed further investigation.

The Vice-President, Alfred L. Simpson, who was in the chair, made a lengthy statement of the various steps taken to obtain a lease of the floors at 12 West 31st Street, calling it a report authorized by the Board of Directors. At its conclusion considerable discussion ensued as to the best course to be followed by the society, which was participated in by several members, the result being that the Board of Directors were directed to continue the Committee on New Quarters, and to look up other new quarters as soon as possible. The names of several new members were read. On June 19th, a very fine floor, covering a greater space than that allowed in the proposed place, was leased in the new Telephone Company's building at 111, 113, and 115 West 38th Street, where the home of the society in the future will be. It is to be fitted up with well ventilated, modern dark-rooms, cameras, skylight, and a pleasant meeting-room, lighted by the incandescent electric light, and heated by steam. The location is very accessible, and quite near Broadway.

On Friday evening of June 20th, at Hardman Hall, corner of Nineteenth Street and Fifth Avenue, the society entertained its friends with "Glimpses of California," an illustrated lecture prepared by members of the Pacific Coast Amateur Photographic Association. Quite a large audience filled the hall. Mr. Frederick Vilmar read the descriptive text, while Mr. A. G. Tisdel operated a dissolving lantern under the direction of the lantern slide committee. The views embraced a variety of subjects. Among them were the Hydraulic Gold Mines, Lick Observatory, Chinese, several of the old Spanish missions, California farming, residences and streets in San Francisco, the bay, curious ships and vessels, and picturesque views in the lumber district. The work as a whole was very satisfactory. Following these were a few views by the hand camera of Wall Street, Broadway, post-office, Pier No. 1, Adirondacks, and Scotland, by Mr. E. Warrin, and three or four artistic group and figure studies by Miss Catharine Weed Barnes. Now that the Pacific Coast Association has joined the American Lantern Slide Interchange, its work will be presented each year before the contributing societies.

Providence Camera Club.—First Annual Excursion of the New England Amateurs.—The excursion of the New England Camera Clubs on Narraganset Bay, Tuesday, June 17th, was also the occasion of the Providence Camera Club's annual outing. It was the largest and most important meeting of amateur photographers ever held in New England, and what added something to the interest of the event was that the steamer which conveyed the party (the Philadelphia of the Continental line) is the same vessel which bore that other notable collection of amateur photographers around the course of the great naval parade in New York Harbor last year.

There were over 140 aboard the steamer when she left the wharf for down the bay, and of these about 100 were from out-of-town clubs—from the Boston, Lynn, Lowell, Worcester, Hartford, New Britain, and Springfield Photographic Societies. Prominent among the excursionists were the following officers of the various clubs: President H. N. Sweet, Secretary E. F. Wilder, and W. A. French, of the Boston Camera Club; President W. H. Drew, and Secretary W. A. Porter, of the Lynn Camera Club; President Atwood, and Secretary G. A. Nelson, of the Lowell Camera Club; Secretary G. E. Francis, of the Worcester Lantern Slide Club; Secretary E. H. Crowell, and Mr. T. Sedgwick Steele, of the Camera Club of Hartford; Secretary Frederick Wesel, of the Photo-section New Britain Scientific Association; Treasurer John Leshure, of the Springfield Camera Club.

The army of photographers-for-pleasure-only had among them an imposing and elegant array of cameras, worth, perhaps, fully $8,000. They were of all sorts and sizes, from the big $500 instrument, belonging to a Providence club man, to the little hand cameras. The list, it was found, numbered over 80. Thirty of these were the tripod or view cameras, taking plates varying in size from 17 x 20 to 5 x 7. The other half hundred were Kodaks, Hawk-Eyes, and other hand cameras. It is probably a safe estimate to say that twelve to fifteen hundred expósures were made during the day, but it is doubtful if an estimate can be made of the amount of developer and patience that will be required to produce the negatives.

The sun was veiled by a heavy gray haze all the morning, but the light on the water was even better than if the full strength of its rays was diffused. Snap shots began as soon as Point Street bridge swung behind the steamer, and either because of the regatta or the fineness of the day, there were numbers of yachts out in the bay. Their beautiful lines were reproduced on many a plate, but with what success was not discovered until after the dark-room operation at home. Rocky Point was visited, and the natural beauties of the place were photogenically transcribed by those of the party less familiar with the place than Rhode Islanders. After forty minutes the lines were cast off and the Philadelphia put for Jamestown.

It was past twelve o'clock when the boat touched the wharf after several ineffectual attempts, disheartening to the hungry ones. Dinner was waiting at the Prospect House. The souvenir menu laid at each plate was made by the Executive Committee of the Providence Club, and consisted of a bromide print cover having a design by Mr. Fred E. Field on the front, and a map of Narraganset Bay on the back, the bill of fare being printed on a separate leaf and stitched in. After dinner, when everybody could "look pleasant" with sincerity, the party of camera young men and women were photographed in groups on the hotel steps (Mr. Jackson, of the Providence Club, securing an excellent 17 x 20 negative of the party) and little exploring parties went outside the settlement for scenery. At three o'clock the homeward trip was begun by making a detour to the picturesque Dumplings and past old Fort Adams. The boat touched at Newport. It was in running near the schoolship and warship in the harbor that the only accident of the excursion occurred. Everybody was pointing a camera at the vessels, and a gust of wind lifted Mr. Wesel's tripod camera and hurled it overboard from the upper deck. The steamer put back, but when the camera was recovered the lens, a valuable one, was missing.

The excursionists reached the Continental Wharf a little after seven o'clock. The delay, caused by the return for the lost camera, made the Boston party late for their train. They made the best of the situation, however, most of them going to the Narraganset Hotel for supper. After supper the fine paintings in the hotel were examined, and the rooms of the Providence Club were visited, where a large number of the photographs from the annual exhibition had been hung. The visiting clubs departed on the ten o'clock train well pleased with the day's trip.

On the return trip the delegates representing the clubs in the New England Lantern Slide Exchange, held a meeting and arranged rules to govern the exchange next season. The exchange has been highly satisfactory on the whole, and all the present members stay in. The experience gained in the past season warrants the assertion that the next sets put into the exchange will show a great advance in the art of slide making, and the effort to furnish the best set will result in the selection of only the best work both artistically and technically. The delegates were Messrs. Sweet, Drew, Atwood, Francis, Leshure, Crowell, Wesel, and Fuller. The Waterbury Society could not send a delegate, but a letter was received from President Pancoast, giving some good points for the rules. The Providence Club will act as Secretary for another year.

Brooklyn Society of Amateur Photographers.—Decoration Day, set aside as the annual Field-Day of the Brooklyn Society of Amateur Photographers, was an event long to be remembered in the history of the club. A run was made to the Bronx River, N. Y., and the large attendance of members showed forcibly the active interest taken in the art by our boys. Although the day was not an ideal one, still the many charming bits of scenery secured bore evidence of the judgment displayed by the Field-Day Committee in the selection of the route traversed. Messrs. Trowbridge, Sewall, and Emery were exceedingly successful in the result of their landscape shots, while Messrs. Forman, Childe, and Ormsbee secured many reminiscences of the trip in the form of groups and character sketches. The Thursday evenings of practical talk are fast becoming a strong feature of the Society's work.

Chicago Camera Club.—Tuesday, June 10th, the club gave its second lantern-slide exhibition to a large and appreciative audience. The slides exhibited comprised the White Mountain set of the Boston Camera Club, and were greatly admired. The Rev. M. L. Williston, president of the club, gave the descriptions.

Lynn Camera Club.—The regular June meeting was held Tuesday evening, June 3d, at the club house. Eight new members were admitted, bringing the total membership of this wonderfully prosperous club up to one hundred and ten. Messrs. Drew, Fox, Darcy, Bacheller, and Bowers were appointed a committee to assume charge of the preparation of a set of slides, to be entitled "Lynn and Vicinity." It was also voted to prepare a set of slides from the series, "About Lynn with a Camera." In the future a standing Lantern-Slide Committee will take charge of all slides and exhibitions. Mr. W. H. Drew, the president, was appointed a delegate to represent the club at the meeting of the New England clubs to be held June 17th. After passing a vote of thanks to Messrs. N. J. and E. F. Bacheller for their efficient oversight of the recent exhibition, the meeting adjourned to Tuesday, September 2d.

Columbus (Ohio) Camera Club.—The club has in preparation a series of slides to be called "The City of Columbus," illustrating scenes in and about that beautiful Ohio town.

Taunton, Mass., Camera Club.—The officers of this recently organized club are: Dr. B. H. Strout, President; Rev. H. B. Cady, Vice-President; Mrs. E. C. Kent, Secretary, and Mr. F. M. Atwood, Treasurer. There are thirty-four members, and meetings are held on alternate Mondays.

QUERIES AND ANSWERS.

22.—Can I secure a copyright on a photograph taken last fall, of which I have given several copies to friends but have not *sold* any? Ought copies for copyright purposes to be mounted? C. DE M.

ANSWER.

Yes, to both queries. Send two copies to the Librarian of Congress, with fifty cents fee.

BOOKS AND EXCHANGES.

PHOTOGRAPHISCHER ZEITVERTRIEB MIT HILFE DER CAMERA. By Hermann S. Schnauss. Dusseldorf, E. Liesegaug.

Anglicized, the title of the above book is, "Photographic Pastimes," and it contains many out-of-the-way applications of photography in the production of strange or novel effects. Several chapters are devoted to the discussion of the best methods of photographing flowers, paintings, animals, glass ware, lightning, crystals, fire-works, etc., followed by chapters giving directions for making doublets, caricatures, silhouettes, distortions, magic photographs, ghosts, *et hoc genus omne*. The book is a compilation from various sources, but it is none the less interesting on that account.

ANLEITUNG ZUR PHOTOGRAPHIE FUR ANFÆNGER. By G. Pizzeghelli. Halle, Wilhelm Knapp.

This is the third edition of Capt. Pizzeghelli's "Introduction to Photography," a book which has enjoyed great popularity in Germany. It is far and away superior to most works of like nature in English, is profusely illustrated, and it is a pity that it could not be done into English by competent hands.

The editor of *The Writer*, the Boston magazine for literary workers, is preparing for early publication a "Directory of American Writers, Editors, and Publishers," in which he wishes to include the name and address of every writer who has had a book printed within ten years, or an article in any periodical of national circulation within five years. There is no charge of any kind connected with the work. Full information will be sent, on request, by the editor of *The Writer*, P. O. Box 1905, Boston, Mass.

We have received Part 12 of Dr. Fabre's "Traite Encyclopedique de Photographie," and are amazed at the amount of careful and laborious research which have been gone through with. The present part contains chapters on positive making by the collodio-chloride, gelatino-bromide, gelatino-chloride and platinotype processes, on all of which it gives valuable and practical instructions.

RECOLLECTIONS OF GENERAL GRANT. By Geo. W. Childs, Philadelphia, 1890.

Mr. Childs has had the happy fortune of knowing intimately some of the most noted personages of this century. His intercourse with them has been that which only kindred souls enjoy. His acquaintance with General Grant was intimate and cordial, and in the little volume now before us, dedicated to Mrs. Grant, he has told the story of that acquaintance in simple and attractive guise. Mr. Child's tribute adds not a little to our knowledge of the great general, and it is a book which will be read with pleasure and profit by thousands.

THE INTERNATIONAL ANNUAL FOR 1890. E. & H. T. Anthony & Co., New York.

The third volume of this popular annual, now before us, is in many respects an advance on its predecessors. The illustrations are better and the articles are, as a rule, more in touch with the photography of the day. Two hundred and seventeen articles is a goodly number for an annual, and it is too much to expect that they shall all be of equal value. Some of them will not add greatly to our stock of photographic knowledge, but the number which will not repay reading is surprisingly few. A careful reading of the book from cover to cover has revealed an astonishing wealth of good things in the photographic line, and we are sure that its purchase will not be regretted. We congratulate the editors on their success.

Tennis players will rejoice in the appearance of the initial number of the *Outing Weekly Tennis Record*, published by the publishers of *Outing*. It is a 16-pages weekly, patterned after the shape and size of *Outing*, and contains reports of club and private games and tournaments, well-written personals, several special articles, and a bright editorial department called the "Editor's Court." There also appears an illustration showing style of tennis dress, a full-page picture of the tennis court of the Berkeley Oval and portraits of J. S. Clark and A. H. S. Post. The subscription is $1.00 a year, or 50 cents for six months. Subscribers to *Outing* receive the *Record* free.

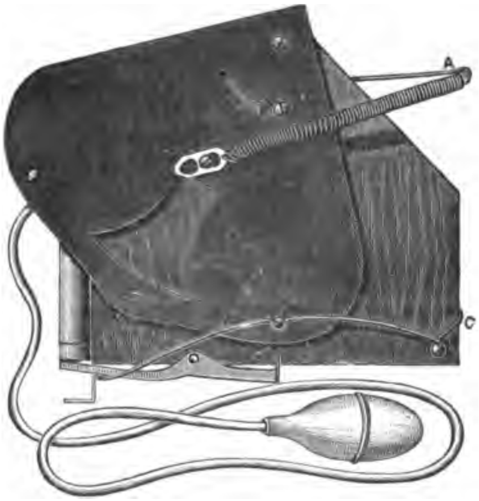
The Photographic Globe is the name of a new candidate for popular favor. It is an illustrated 14-page monthly edited by Maxmilian Toth and published at 55 Franklin Street, New York, at $2.00, a price which ought to insure better typography and paper.

The May number of the *Bolletino di Fotografia* contains a phototype reproduction of a negative taken with the lens pointing towards the sun and giving the so-called "Moonlight Effect." The same number contains a thoughtful paper on "The Duration of Exposure," by Sig. Roncalli.

The Photographic Herald has added four pages to its reading matter, and now gives fourteen pages of reading matter monthly at the low price of 50 cents for the yearly subscription.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]



Hale's Shutter. — We have recently tested a sample of this new shutter, manufactured by Messrs. J. B. Colt & Co., No. 16 Beekman Street, New York, and we have found it reliable and efficient in its action. Its construction is plainly shown in the annexed cut. The hard rubber disk moves across the lens opening in the wooden plate, and the shutter is set, without uncovering the lens, by moving the pivoted arm A, carrying the coiled spring, from side to side. The price of the shutter shown in the cut is $3.50, and it is good value for the money.

The Standard Plate.—Recent tests of these plates have shown a decided improvement over earlier numbers. The later numbers work cleaner, develop better, and give better modeling, and there seems to be no reason why the Standard should not come to the front.

Ivory Films.—We have recently tested a package of these films, manufactured by the Allen & Rowell Co., Boston, and we found them quite free from the imperfections which

seem inherent in celluloid films. As a rule we still prefer glass plates for near-by work, but on a trip the films are a great advantage, and the ivory films have a good reputation.

***Card Stock.*—Messrs. S. Trier & Son, 90 William Street, New York, send samples of an attractive gilt beveled-edge card called the "Victoria," which they make in all shades. The edge is finished in a new and pleasing way. The firm will send samples on application.**

◆

United States Photographic Patents

Issued in June, 1890.

JUNE 3d.

429,558—Oil Finish for Photographs; A. C. Brendecke, Chicago, Ill.

JUNE 10th.

429,705—Automatic Photographic Apparatus; M. J. Steffens, Chicago.
429,792—Panoramic Photographic Camera; P. Möessard, Paris, France.
429,843—Indelible Print on Picture; F. C. Coburn and J. R. France, New York.
429,929—Photographic Shutter; W. B. Luce, Brooklyn, N. Y.

JUNE 17th.

430,114—Magic Lantern; J. B. Colt, New York.
430,115—Lamp for Magic Lanterns; J. B. Colt, New York.
430,242—Photographic Print Washer; J. F. Way, Waterbury, Ct.

JUNE 24th.

430,794—Photographic Camera; F. Whitney, Chicago, Ill.

◆

List of Dark-Rooms Open to the Use of Amateurs.

LURAY INN—***Luray, Virginia.***
PROSPECT HOUSE—***Blue Mountain Lake, Hamilton Co., New York.***
HIGH FALLS HOUSE—***Dingman's Ferry, Penn.***
THE STANLEY HOUSE—***Lake Joseph, Muskoka, Ont.***
CASCADE LAKE HOUSE—***Adirondacks, N. Y.***
HOTEL CORONADO—***San Diego, California.***
THE RAYMOND—***East Pasadena, California.***
SAN MARCO—***Santa Barbara, California.***
DEL MONTE—***Monterey, California.***
SPENCER HOUSE—***Niagara Falls, New York.***
SLIDE MOUNTAIN HOUSE—***Big Indian Catskill Mountains, New York.***
FORT WILLIAM HENRY HOTEL—***Lake George, New York.***
PROFILE HOUSE—***White Mountains, New Hampshire.***

THE WESTPORT INN—*Westport, New York.*

BREEZE LAWN—*Hunter, New York.*

LAKE VIEW HOUSE—*Bolton, Lake George, New York.*

MOUNTAIN PARK HOTEL—*Hot Springs, North Carolina.*

THE CLEREMONT HOUSE—*Southwest Harbor, Mt. Desert, Maine.*

COLE'S HOTEL—*Kidder's Ferry, Cayuga Lake, New York.*

THE CHISWICK INN—*Littleton, New Hampshire.*

SAM. C. PARTRIDGE—*San Francisco,* 529 *Commercial Street.*

THE CHICAGO CAMERA CLUB—*Chicago,* 182 *Wabash Avenue.*

GAYTON A. DOUGLASS & CO.—*Chicago,* 185 *Wabash Avenue.*

THE BLAIR CAMERA CO.—*Chicago,* 208 *State Street.*

W. H. WALMSLEY, LTD.—*Philadelphia,* 1022 *Walnut Street.*

R. H. MORAN—*New York,* 396 *Broome Street.*

LOEBER BROS.—*New York,* 111 *Nassau Street.*

BARKER & STARBIRD—*Boston,* 56 *Bromfield Street.*

ARROWHEAD SPRINGS HOTEL—*San Bernardino Co., Cal.*

W. C. RUSSELL—*Baltimore, Md., North Charles Street.*

ALLEN BROS.—*No.* 14 *East Larned Street, Detroit, Mich.*

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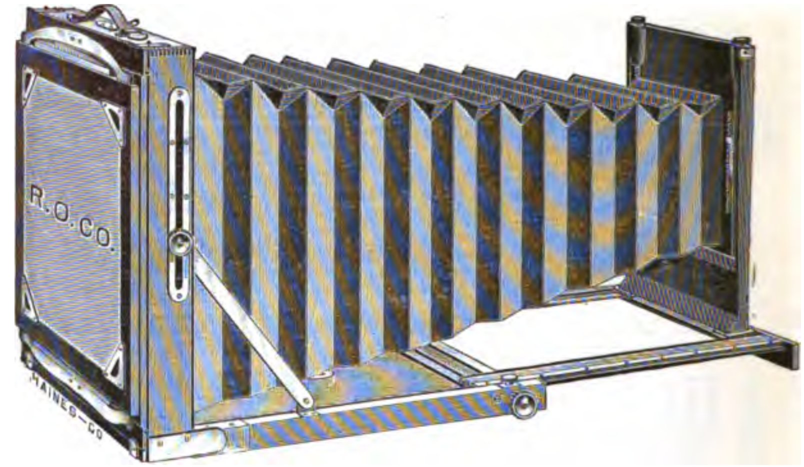
8—1y

The "Universal" Camera.



CAMERA FULLY EXTENDED.

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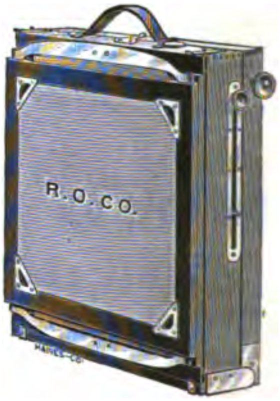

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The Universal Camera is a modified English Pattern and is the most compact camera in market, the 6½x8½ being but 2⅝ inches thick when folded and weighs but 5 pounds, and has a draw of 20 inches.

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Phœbus Detective Camera

Decidedly the Best and Most Reliable Detective Camera in the market.

IT IS made for both Dry-Plates and Celluloid Films, accommodating either Six Double Plate-Holders or Ten Double Film-Holders. May be used for Instantaneous Work, or Time Exposures on a Tripod, Upright or Lengthwise. Is provided with a Focusing-Scale. Two Recessed View-Finders, etc., and is finished in Black Leather, the workmanship throughout being thorough and of the highest grade. Size full 4 x 5 inches.

We supply them with the best and quickest lenses in the world, as follows:

	PRICES.
PHŒBUS DETECTIVE CAMERA, with Three Holders for Plates or Films, and fitted with No. 00 Extra Rapid Euryscope Lens,	**$82.50**
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Any of these Detectives with Eastman's Roll-Holder and Automatic Tally Made to Order for $15.00 additional.

We carry also a full line of the popular

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Adapted to Plates, Films, or Roll-Holder.

In Natural Wood Finish, $15.00; Leather Covered, $20.00; Leather Covered and fitted with Darlot's Improved Rapid Hem'l Lens, $35.00. With 4 x 5 Roll-Holder loaded with Eastman's Transparent Films for 100 Exposures, $14.75 additional. Can be fitted with Euryscope Lenses at short notice. KODAKS in all sizes constantly on hand.

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A Miniature Detective Camera, Compact and Simple.

"THE LILLIPUT"

Makes a Picture Two and-a-half inches Square. Size of Camera, 4x4x6 inches, outside measurement. Using ordinary Dry Plates. Easily handled and manipulated by any one.

These Negatives make beautiful Lantern Slides and can be enlarged to almost any size. Camera comes in a handsome Sole Leather Carrying Case, with Patent Double Holders, 108 Dry Plates and Non-Actinic Lamp. Illustrated book of instruction with each.

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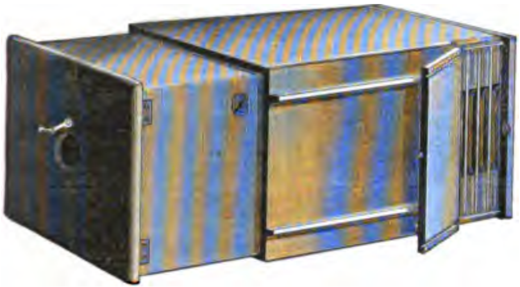

Showing box extended and the arrangement of the bottom.

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Latest Achievement in Cameras.

Possessing every advantage peculiar to detective or hand cameras, and the adjustability of the bellows body. In size it is 5 x 6 x 9 inches, the smallest 4 x 5 detective made, and yet it will accommodate any lens from 4½ to 8 inches focus.

It is fitted with a 4 x 5 Pantagraph R. R. Lens, 5¾ inch focus, working aperture f-6, and with the new **Ultimate Shutter** adjustable for exposures from 1-30 to 1-500 per cent. of a second, and time exposures from 1-2 per cent. up.

The Camera includes a flap shutter in rear of the lens for use in changing stops or shutter speed, and four of the new patent Ultimate Plate-holders, the smallest 4 x 5 double-plate holders made. These are locked in position by a new arrangement which holds them rigidly in place by the simple act of placing them there.

They may be removed and a 3¼ x 4¼ Eastman Roll-holder substituted as easily as on an ordinary view camera. We advise the use of the f-16 stop for fair weather work, and the Ultimate Developer.

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MOST ENERGETIC DEVELOPER KNOWN.

By its use the f-16 stop may be used instead of the f-8 with other developers, and the f-8 stop acquires four times the rapidity it formerly possessed.

This enormously increases the capacity of any lens, either for rapidity or extreme definition and depth of focus. Even landscape lenses may be used with high speed shutters.

Used full strength, gives strong, black deposits; when well diluted with water, gives remarkable detail and a fine, warm tone. For ordinary use it must be well restrained, either by using many times over with small additions of fresh solution, as required, or with bromide of potash or soda.

Showing Lens Opening and Shutter-Lever.

A trial will satisfy the skeptical.

PRICE, 8 oz. Bottle, 40c.; 4 oz. Bottle, 25c.

The QUEEN FLASH LAMP (we guarantee it), 75 c.; the QUEEN FLASH LAMP, '89, $2.50; A Nickel Plated Pocket Lamp for Pure Magnesium on Explosive Powders.

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Time and Instantaneous.

Burrows' Patent.

THE LATEST AND BEST.

This shutter is noted for its compactness, and on account of its form is strong and will stand hard usage. It is finished in the very best manner, and, while strongly made, the moving parts are exceedingly light and simple.

After being set, and the slide drawn, it may be changed to time of instantaneous (slow or fast), by a touch of the finger. It gives time exposures from 1 to 1-10 second, which is an important advantage.

These shutters are fitted to lenses giving the full size aperture necessary to rapid work.

The parts are perfectly balanced, making shock imperceptible; rebound is impossible, avoiding secondary exposure.

PRICE, Fitted to Lens Cells Complete:

	Aperture Diameter.	Outside Diameter.	For Lenses.	Price.
No. 1, ...	1 in.,	2¼ in.,	4 x 5 -5 x 8,	$15.00
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" 3, ...	2 "	4½ "	8 x 10 -up,	21.00

Where extra flange collar is necessary, $1.25 to $1.75 extra.

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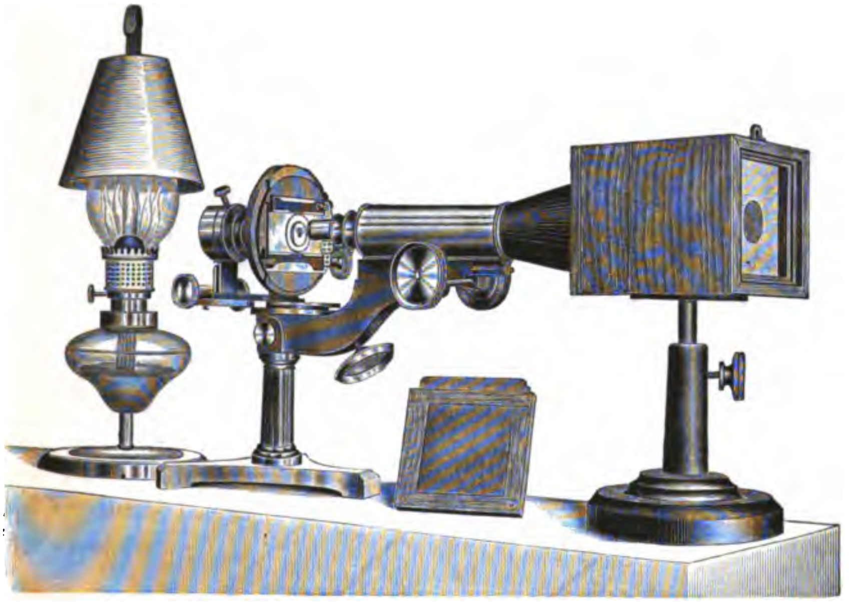
WALMSLEY'S

Handy Photo-Micrographic Camera.



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This practical little Camera, really makes the fascinating and most useful practice of Photo-Micrography easy to every one possessing a Microscope. It can stand upon the work table ready for instant use, is adjustable to any Microscope, and is capable of doing the highest class of work. Full description with Sample Print mailed on application. Complete directions for use are contained in our Illustrated Catalogue Now Ready.

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Avoid the Dangerous Explosive Compounds.	**Re-loads Itself After Each Flash.**

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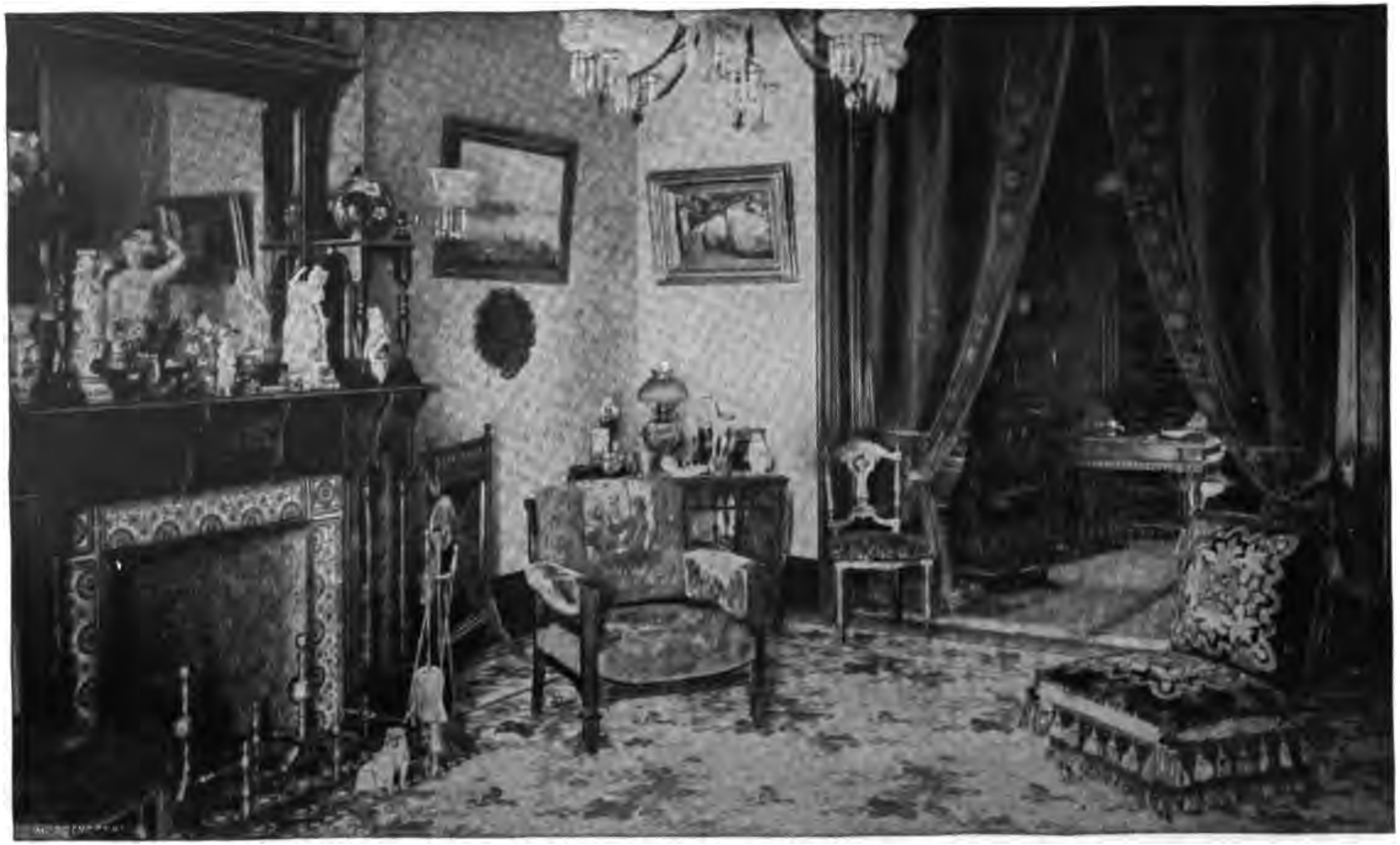

NEGATIVE BY MISS I. R. HOOPER.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

[illegible] II. [illegible] AUGUST, 18[illegible] [illegible]

Our Illustration.

THE excel[illegible] work which we give [illegible] from [illegible] R. Ho[illegible], which w[illegible] a diploma [illegible] the last Joint [illegible] worth careful study for its arrange[illegible] of details. [illegible] the Moss Engraving Company, and [illegible] are [illegible].

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Modern Methods of Illustration.

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THIS series of ar[illegible] the [illegible] of the [illegible] of the magazine [illegible] of practical [illegible] amateur of [illegible] skill [illegible] on his own [illegible] open to him [illegible] experimental [illegible] the best of [illegible] American amateurs [illegible] advantage [illegible] they not deterred of [illegible] difficulties. B[illegible] processes [illegible] to be so [illegible] and secrets [illegible] success [illegible] except to those who [illegible] themselves [illegible] worker. [illegible] That there are jealously guarded secrets [illegible] whether the one or the other need [illegible] from [illegible] apprentice [illegible] on some of the [illegible] methods, by [illegible] photographic negative can be transformed [illegible] printing block, [illegible] the production of prints in permanent ink.

THE AMERICAN

AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., AUGUST, 1890. No. 8.

Our Illustration.

THE excellent example of interior work which we give this month is from a negative by Miss I. R. Hooper, which won a diploma at the last Joint Exhibition, and it is well worth careful study for its arrangement of details. The block was made by the Moss Engraving Company, and the prints are from the press of our own printers.

◆

Modern Methods of Illustration.

BY. W. H. BURBANK.

I.—THE PHOTOTYPE PROCESS.

THIS series of articles has for its object the instruction of the readers of the magazine in the working details of practical methods, by which any amateur of a fair degree of manipulative skill may prepare printing blocks from his own negatives, and so find open to him a new and fascinating field for experimental work, one which may in some cases become profitable. I have the best of reasons for knowing that many of our American amateurs would gladly adventure upon this untried field, were they not deterred by fear of insurmountable difficulties. By most, the photo-mechanical printing processes are thought to be so hedged in by difficulties and secrets as to make success impossible, except to those who have served a long apprenticeship to a practical process worker. That there are difficulties I am far from denying. That there are jealously guarded secrets is undoubtedly true, but neither the one nor the other need deter the earnest worker from trying his "'prentice hand" on some of the least difficult of the methods, by which a photographic negative can be transformed into a printing block, suitable for the production of prints in permanent ink.

I have not ventured to write upon this branch of photographic work without sufficient practical acquaintance with the processes to be described to enable me to give reliable directions for their practice. As an enthusiast in photographic matters, and a firm believer in the maxim that "What man has done, man may do," I have never allowed the existence of difficulties or secrets to deter me from the attempt to overcome the one and discover the latter. I have not always been successful. "*Mais que voulez-vous?*" I have made some successes amid many failures, and it is of the successes I propose to speak in this series, omitting, for the sake of brevity, all historical allusions, and plunging at once *in medias res*, by a description of the phototype process, which is known by various other names—albertype, collotype, photogelatine, and a host of others, all alike based upon the insolubilizing effect which light has on a film of bichromated gelatine, and the ink-repelling power of water.

Of all the reproduction methods, the phototype renders the photographic effect most nearly, especially when the prints are made on fine coated paper, while for those who prefer more artistic effects, the affair is made by selecting a plain paper, either plate or the kind technically known as "gelatine plate," which may be had of most large dealers in paper. It is of all processes the best for the amateur's maiden efforts, since its practice on a small scale requires no expensive plant and the prints can be made by the amateur himself in a simple letter copying press, if they are not larger than the whole plate.

Formulas for the sensitive mixture are "thick as leaves in Valombrosa," but the interest of my readers will be best consulted by giving only a few typical formulas which actual practice has demonstrated to be capable of giving good results in amateur work, which is not subjected to the severe tests required of the professional work. The amateur does not care for a plate capable of giving a large number of impressions, but he does care for one of moderately easy preparation which can be printed from without the need of an expensive press.

The following formula gives such a plate, and with care a hundred or more prints can be made from a single plate in an ordinary copying press: Copper plates, similar to those used by etchers, form the support for the film. They should be at least two inches larger on every side than the negatives to be printed from. The edges are beveled and the corners rounded off with a file and then carefully grained with a muller and fine emery. The graining must be done with care to avoid scratches which would print black in the prints. After a thorough washing, to remove all traces of the emery, they are ready for the sensitive mixture which is prepared as follows:

Nelson's No. 1 gelatine, ...	180 grains.
Water, ...	3 ounces.

The gelatine is first soaked in the water for fifteen minutes and then dissolved in a water bath with gentle heat. When the gelatine is dissolved in one ounce of Coignet's *colle de peau*, a diaphanous glue made from hides and cartilages, is added gradually in small pieces. When this is dissolved, ninety grains of bichromate of potash, finely powdered, are added to the solution, which is to be well stirred until the bichromate is completely dissolved. Three or four drops of ammonia are then added and the mixture filtered warm through flannel.

The coating is done as in the case of gelatine plates. The copper plate is dusted with a soft brush, carefully leveled and flooded with sufficient of the bichromated solution to make a fairly thick film when dry. To facilitate the spreading of the emulsion, a little warm water is first poured over the plate and well drained off. The coating need not be done by ruby light as the plates are not very sensitive until dry. Weak white light is perfectly safe. I usually do my coating at night by gas-light. As many plates are coated as the drying-box will accommodate. When the last plate is coated the first one is examined for air-bells. If any are found, as is usually the case, the plate is heated over a spirit lamp until the gelatine runs completely over the plate which is then placed in the drying-box or stove. Each plate is subjected to the same treatment.

The drying-box for an amateur phototypist need not be the elaborate affair required for commercial work. All that is required is that it be provided with a number of shelves or racks which can be accurately leveled, and capable of being heated. It must have efficient means of ventilation and if the plates are dried in an ordinary room in daylight, it must be made light-tight. As I coat and dry my own plates at night, my drying-box is simply a square kitchen utensil known as a steamer. It has a number of metallic racks for holding tin dishes and these are replaced by a few wooden cross pieces in which are screwed several binding screws known to every electrician. By means of these screws a plate is easily leveled. The temperature of the box must be kept at one hundred degrees and the plates will dry in about two hours. The door of the box must not be opened too frequently or unequal drying will leave marks on the plates. When dry, the plates will keep in good condition for a few days, if kept away from the light in a dry place. Plates two or three days old work better with thick negatives.

The best negatives for the phototype process, for half-tone work at least, are those which are called soft and harmonious, but any negative which will give a good silver print without "dodging" will make a good phototype block. If the amateur desires his prints to be unreversed he must use reversed negatives. Those who use the new Eastman film will find it easy to convert them into reversed negatives by placing them in the printing frame with the film side next to the glass front. Those who use the dry plate will have to make first a positive, by contact printing or in the camera, and from this make a reversed negative in the camera by photographing the glass positive with the film turned away from the lens. Still another way is to make a good silver print from the negative and then to photograph this on Eastman's transferotype paper; this, when dried on a piece of plate-glass and deprived of its paper backing, will give a reversed negative.

As I am writing only for amateurs I say nothing about making a negative from a silver print by the wet collodion process and then stripping the collodion film from its support in order to reverse it on a piece of plate-glass. I am not altogether in the habit of using reversed negatives for merely experimental work. "A rose by any other name would smell as sweet," and a reversed landscape print has its share of beauty. Ordinary negatives can be used for first experiments. In order to secure absolute contact between the copper plate and the glass negative, a strong, deep printing frame with screw pressure must be used. It must have a thick plate-glass front and the screws must be well screwed home. Danger of breaking the negative is diminished if the middle screws are tightened first. The exposure is best made in diffused light to avoid excessive relief in the block. The time can be learned only from experience. As an average, under negatives of moderate density, half an hour is about right. A bichromated film requires about double the exposure necessary to make a silver print. When taken from the frame the image should be distinctly visible, but not too pronounced, in brown on a yellow ground. When taken from the printing frame the phototype plate is immersed in cold water for three minutes, rendered perfectly surface dry with a piece of soft linen, after which it is ready for the printing press.

The advantage of this method for the amateur experimenter is that no expensive plant is necessary and that the plate is easily inked up owing to the absence of any strong relief. It is not, however, well adapted for printing a large number of impressions from a single plate.

When large numbers are to be run a different method must be adopted as will be described later when the details of inking up and printing have been discussed.

(To be continued.)

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My Experience with Hydroquinone.

By J. C. Hegarty.

MY attention was first called to hydroquinone about the time of its introduction by reading several articles setting forth its merits as a developer in the various photographic journals. During the summer of 1888 I saw some plates developed with this new reducer by a photographer in Philadelphia. I was pleased with its action, and secured a supply for the purpose of experiment. After my return home I gave the hydroquinone developer a trial, and have been using it in my photographic work ever since. I have found it superior to pyro in every way except in rapidity, and this objection of slowness in working can be removed by using caustic potash as an accelerator.

But hydroquinone does not owe its claim to superiority to rapidity of working, but to other points—the fine negatives it produces, the beautiful detail, even in the deep shadows, and entire absence of stain.

Another advantage which should be noted is the great latitude of exposure, and the fact that every effect of exposure appears to be grasped by it. I have exposed plates on scenes with heavy foliage, dimly lighted, and views in shady dells, giving a very liberal exposure, and developed with hydroquinone, getting full detail in the shadows and fine half-tones, without the high lights being opaque or too thin. Had the same plate been developed with pyro it would have resulted in a flat negative, with the high lights very much over-timed. The absence of fog or stain is one of its chief merits. The development of a plate can be prolonged to almost any extent without danger of fog, and the shadows always remain clear and transparent. Its pleasant and agreeable method of working, and the sureness of results with hydroquinone developer, makes developing a pleasure, and relieves the amateur of many disappointments.

Some operators are not successful in working hydroquinone; but doubtless most of the complaints are from persons who do not properly use it, or work with a solution not properly prepared. They may have under-exposed their plates, or lacked the patience necessary to develop a short exposure.

I tried several formulas, most of which were good, and being an advocate of simple formulas I chose the following, which has proven very satisfactory. The ease of working, and certainty of results with it, has led me to recommend it to others.

A.

Sulphite of soda crystals,	2 ounces.
Ice or distilled water,	16 ounces.

Dissolve and filter; then add

Hydroquinone,	120 grains.

B.

Carbonate of potash,	1½ ounces.
Ice or distilled water,	16 ounces.

Normal developer: One ounce of A, one ounce of B, and one ounce of water. If pure water is used, the amount of sulphite used in **A** solution is sufficient to ensure its keeping; if more should be added or any acid used, it retards its action. I find no difficulty in keeping it in good order for weeks. Nothing is added to the carbonate of potash solution.

Now as to the method of developing. First notice the temperature of your dark-room, which should be 70 or 75 degrees Fahrenheit. I find that a difference in the temperature makes a marked difference in the time it takes to develop.

If I have a batch of 6½x8½ plates to develop which I think have had about the correct exposure, I mix five ounces of solution with a little less than the normal quantity of alkali, and if my note-book leads me to believe that any are over-exposed I reserve them for the last, using the weakened developer on them.

Put a plate in the tray and flow with the solution; if it has been correctly exposed and the solution is freshly mixed, traces of the image will begin to appear in one and one-half or two minutes, and grow steadily with good contrasts and infinite detail. Do not hurry the development by adding alkali, for the finest tone graduations are built up slowly. The development is completed when the shadows show no white on the surface. The high lights usually show on the back of the plate. Wash and fix as usual, leaving the negative in the hypo a few minutes after it is clear to insure thorough fixing. You will then have a crisp, brilliant negative, full of detail in the shadows and of fine printing quality, the film being pure in color through all the range from black to transparency.

If a plate is known to have been over-exposed, or if you are doubtful as to the exposure, the solution should be prepared with not quite the normal amount of A solution and about one-fourth of potash solution. The image will then appear very slowly, giving the person time to modify the developer to suit the exposure, cautiously adding alkali or hydroquinone as the plate requires. It should then build up in fine form. Some may become impatient at the time required; but the amateur who works for results will not object to the time; and who would not rather have one good negative than a dozen poor or indifferent ones?

In regard to exposure: I am apt to over-expose a trifle and develop slowly, and by that means secure brilliant negatives, with plenty of detail in the shadows.

I will not say that hydroquinone will take the place of all other developers, for during the great advancements in photography other reducers may be discovered, and the possibilities of eikonogen are not yet fully known; but I do think that a developer superior to hydroquinone would be a perfect universal developer, and I venture to say that if hydroquinone development is once mastered, but few will return to pyro.

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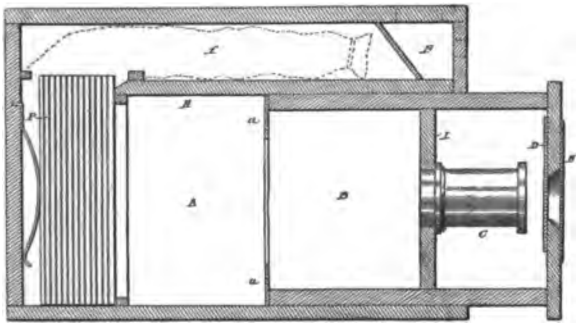
A Simple Magazine Camera.

THE number of amateurs who make much of their photographic outfit is probably on the increase. Aside from the saving of expense thus made possible, there is a pleasure derived from the use of an instrument of home manufacture which is unknown to those whose means enable them to order an outfit from their dealer regardless of its cost. The increasing popularity of the hand camera has brought with it the desire on the part of many for a simple, efficient, and inexpensive box, capable of being made at home without any sacrifice of efficiency. No one can have used a hand camera for any length of time without coming to the conclusion that its efficiency is greatly increased by the adoption of the magazine principle without plate holders, and a method of construction which allows lenses of different focal lengths to be used. A prime essential in a set of working drawings for a hand camera of home construction is that they shall be easily intelligible and capable of translation into wood with the least expenditure of time and expense compatible with the doing of good work in the field or on the street.

A somewhat extended experience with cameras of various makes and degrees of complication has convinced me that the hand camera at least should be characterized by "sweet reasonableness" in construction if it is to be relied on at all times. Complication in working mechanism is to be avoided as far as possible.

All these conditions were borne in mind in planning and constructing the box now to be described, and the result is a hand camera capable of holding one dozen plates, with not a projecting part, and which can be made by any one of average ingenuity without having recourse to a brass foundery or a bellows maker. At the same time its ability to do good work is conditioned only by the lens with which it is fitted, and the care taken in its construction.

As will be seen from the cut, the principle is that of two boxes, one sliding within the other for focusing, and a flexible sleeve of rubber cloth for convenience in changing the plates. While this method of changing plates may not be as convenient as some of the more elaborate devices, it has the decided merits of being always in working order and of requiring no great increase of bulk. It is also extremely easy to make.



The whole thing is so simple and so well shown in the cut that a very little description will serve to make its method of construction plain. The dimensions given are for a box for four-by-five plates, the lens being six inches in focal length. The larger box, A, is 8 inches long, 5 inches deep, and 5⅛ inches wide, inside measurements. The smaller, sliding box, B, is 5 inches long, 4 inches deep, and 5⅛ inches wide, outside measurements. It slides within the larger box, which has a shelf, H, extending across it and running back six inches as shown. The inside of the smaller compartment in A is lined with black velvet to a depth of 4 inches, in order to shut out all light. The box B is provided at its rear end with a rectangular diaphragm, *a*, *a*, of blackened card-board, to cut off all rays reflected from the interior. The lens board, I, is mounted in the interior of B in such a way as to bring the front of the lens quite close to the shutter, and not as shown in the cut.

The shutter, D, is the "Facile," and its construction was shown in our May issue. The two horizontal rods which operate the shutter project through the side of the box, the holes being lined with velvet to prevent the intrusion of light. Motion is communicated to the shutter by pressing one of the rods, the one projecting most being the one to be pressed for the exposure. The advantages of this shutter are its simplicity and the fact that it does not have to be thrown back to set it, thus opening the lens. However, any other form of shutter may be used. The shutter is best made of ebonite, and it is pivoted near the top of B with the center of its opening opposite the center of the lens. It is well to line the inside of the opening in the end of B with black velvet to lessen the chances of light creeping in. E is a diamond shaped piece of wood revolving on a screw at one end. Its purpose is simply to prevent dust from getting at the lens, and to give a finish to the box. It also serves as a cap for making time exposures.

To form the focusing plane four thin strips of wood, with their back edges covered with velvet, are screwed squarely around the inside of the exposing chamber. One-half of the top of A is made to open in order to allow the plates to be introduced and changed; *f*, *f*, is the sleeve. One end is closed by a rubber band. It should be made as wide as the box and long enough to run well up the arm. The plates at P are held in metal carriers made from thin sheet iron or zinc, with both ends and the lower edge turned over twice at right angles to form grooves into which the plates slide. The holders should be somewhat longer than the width of the plates in order that they may be easily manipulated. The bundle of plates are pressed tightly forward by means of two springs of stiff piano wire let into the end of A near each side. F is the finder, which may or may not be added.

In order to manipulate the plates, it is only necessary to introduce the hand into the sleeve ; the forward exposed plate, which can be easily felt with the fingers, is lifted up and inserted behind the others. The springs will force the next plate forward against the focusing ledge.

The inside of the boxes should be given a coat of dead black varnish, which is easily made by thinning down shellac until it no longer dries with a gloss, and then adding fine lamp-black. The focusing is done by moving B in or out. Previous to putting the end into A, marks should be made on the top of B along the front edge of the forward end of A, to indicate the extent of draw necessary for objects at varying distances from the lens. To do this the lens is screwed in place, and a piece of ground glass pressed firmly against the focusing ledge. The camera is then mounted on any convenient support, and objects at five, ten, fifteen, twenty-five, fifty, and one hundred feet distance focused sharply, a white mark being drawn on the top of B for each distance, B being painted a dead black outside. A leather handle and one or two tripod screw-plates, with outside finish to suit, complete the box. Three-eighths inch stuff should be used in making the box. Spanish cedar, mahogany, cherry, or pine answer well; the former three being most suitable if the wood is to be hand-finished, the latter being used when the outside is to be covered. Black grained leather, or the tough paper known as leatherette, are the best covering materials. There is nothing particularly novel or striking in the construction of the box, but it is recommended as a simple, efficient, and inexpensive hand camera for those who use such a box as an auxiliary to a large camera.

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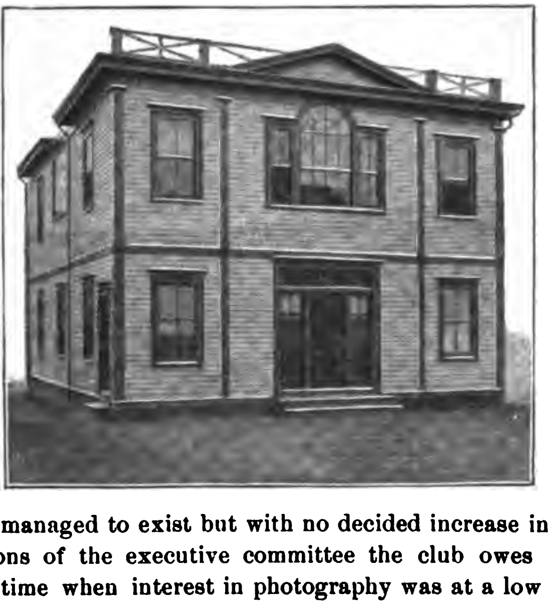
The Lynn Camera Club.

THE history of the Lynn Camera Club affords a striking instance of the revivifying power of a club-house on a moribund organization. The club was formed January 3, 1888, with a charter membership of twelve. An old gallery with a good north light was rented, and for two years the club managed to exist but with no decided increase in membership. To the exertions of the executive committee the club owes its continued existence at a time when interest in photography was at a low ebb. But no



club can thrive with insufficient and poorly arranged quarters, and in the spring of 1889 it was found necessary to look for better facilities.

A careful canvass of the city failed to discover suitable quarters, and negotiations were entered into with Mr. N. J. Bacheller looking to the erection of a building for the use of the club on his estate at No. 42 Broad Street. These negotiations were successful, and a two-story building, 30 x 40 feet was erected and dedicated January 23, 1890, the club having been incorporated December 20, 1889.

The building is a model of convenience and comfort. It is of wood, two stories in height, and flat roofed. On the first floor are the dining or billiard room, a storage room, and the furnace room. A broad stairway leads to the studio and developing room above. The studio is a large, well appointed room, thirty feet long, forty feet wide in front and fifteen feet in the rear. A striking feature of the room is a large open fire-place, the gift of Mr. J. N. Smith, with a pair of massive andirons, welded by electricity, and the gift of Mr. Herman Lemp. Above the mantel-shelf are two electroliers, the gift of Mr. E. L. Rogers. At the lower end of the room is a ten-foot screen for lantern exhibitions. The sky-light is eight feet square.

RECEPTION ROOM.

Opening from the studio is the developing room, a large, well lighted and ventilated room, fitted with all the conveniences for development, and containing the club-lockers and an enlarging camera. The room is lighted by electricity with incandescent lamps inclosed in ruby shades.

The system of electric lighting is uncommonly complete, as why should it not be, many of the members being connected with the Thomson-Houston Company. Professor Thomson contributed the wire and Mr. Geo. D. Bancroft did the wiring. All the rooms are connected with the Treasurer's office in an adjoining building by speaking tubes and electric call bells.

A portrait camera and Thomson Dissolving lantern complete the photographic equipment and add greatly to the interest and value of membership in the club.

That the committee acted wisely in building the club house is shown by the fact that the membership has increased from twenty-six in July, 1889, to one hundred and ten at the present time. The list of members includes many of Lynn's leading citizens, and the Lynn Camera Club has become an institution in the city.

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The Arc Light for Projection.

BY DR. L. H. LAUDY.

[Read before the Society of Amateur Photographers, April 18, 1890.]

A GENERAL adoption of the electric arc light for purposes of projection is not far distant, and having devoted some time to the subject, following it up from the days in which the current was produced from batteries until to-day, when we have on tap a current of electricity as we have gas or water supplies, it seems most fitting that my experience should be given to the members of this society, and my object in inviting you here this evening is to give you some experimental facts, and ask your verdict as to its application for lantern projections.

Our usual method has been to make use of incandescent lime. This was a great advance from the oil lamp, and to-night we take probably the last step in this direction of improved illumination, and make use of the most intense artificial light known to science.

Artificial light is generally produced by raising some body to a high temperature. If the temperature of the body be greater than that of the surrounding atmosphere it parts with some of its energy in the form of radiation, and at a high temperature this radiation becomes sensible to the eye, passing from red, yellow, green, to blue and violet. At the present time for all artificial illumination the radiant body is some form of carbon, either incandescent or combining with the oxygen of the air.

The electric light is the outgrowth of the experiments of Sir Humphrey Davy, made at the Royal Institute, London, in 1801, when he used 2,000 cells, with which he decomposed Na. and K. and separated their metallic bases. These experiments were repeated and extended, and by using charcoal points as terminals an intense and dazzling light was produced, to which the name voltaic arc was given. Foucault used a more dense form of carbon for his newly-invented lamp or regulator, producing a more steady and uniform light.

The arc light when produced from a battery, brilliant as it is, was confined to the lecture-room or an occasional outdoor display. The fatal difficulty was the labor and cost of the electrical energy, and it was not until the discovery of induced currents by Faraday that this obstacle was removed.

It was many years before any practical application was made of this most important electrical discovery, and it required the combined forces of Nollett, Von Maldern, Holmes, Wilde, Ladd, and Siemens to produce by mechanical means, direct from motion, a supply of electrical energy that would equal that produced from the battery. Even as late as 1870 this did not seem possible, for the best dynamos at that time yielded only a small amount of electrical energy.

In 1871 Gramme presented to the Academy of Science a description of a new form of magneto-electric machine possessing new features, which were so remarkable as to astonish all the world. Gramme conceived the idea of using a ring, and rotating this between the poles of a magnet in such a way as to prevent reversals in the armature. Many ridiculed this idea. Nevertheless it produced in practice a machine that yielded large currents at much less cost, and laid the foundation of our present system of electric lighting.

From whatever source the electricity is supplied to produce light, it is necessary that the current meets with a resistance, and this condition is best fulfilled when two pieces of carbon are made to touch and then slightly separated. The current in passing between the space so increases the resistance as to produce light of great intensity, and is called the arc light.

That a constant resistance may be maintained favorable to the production of light, some mechanical device that will separate and regulate the distance of the carbons is essential. Such an apparatus is called a regulator or arc lamp. There are few inventions on which so much ingenuity has been expended as on arc lamps. The number is already very great and is on the increase, and every bulletin of the patent office is sure to contain several inventions of this kind.

Between the better lamps there is not much to choose for ordinary illumination, but for special purposes, as in the case of lantern projection, some points are of vital importance, for the success will depend mainly upon the steadiness, good behavior, and the excellence of the automatic feed, quality and position of the carbons, together with a uniform action of the dynamos.

At present arc lights are run both by continuous and by alternating currents, *i.e.*, in some cases the current is steadily in the same direction, while in others the current consists of pulses, alternately positive and negative, succeeding each other at the rate of from 200 to 300 per second.

The first lamp for regulating the position of the carbons was devised by Thomas Wright, of London, in 1845. A few years later Le Molt, of France, devised a clock-work regulator which kept the light steady for several minutes at a time, but the flickering was too great to make it of any practical value. These were followed by Archerean, Lacassagre, and Garffe, each lamp an improvement on the other, which brought the standard of regulators near to practical application.

In 1849 Foucault devised a clock-work regulator that differed in many details from the ones before used, and gave comparative satisfaction. It was extensively employed for scientific purposes, and, in fact, was the only lamp that was suitable for lantern projection, and is to-day used in many physical laboratories in preference to other lamps.

The next advance was by Serrin, whose regulator kept the carbons exceedingly steady and maintained them in their relative positions. This lamp has been used for light-house illumination, and still maintains that position, for, like the Foucault, it is a focusing lamp, the function of which is to maintain the carbons at a central point. To produce this effect the carbons are so arranged that a different motion is imparted to each, that the wearing away may be compensated for by a more rapid movement of the positive pole with only a gradual waste of the negative carbon. By this simultaneous approach of both carbons, the positive moving through double the distance of the negative, the arc preserves its normal length and its position is maintained in space. This is accomplished by an ingenious mechanical device, actuated either by clock-work or electric magnets.

The regulation of the length of arc that shall produce the most intense light with the least current is confined to very narrow limits, and the mechanical construction of the lamp that will yield satisfactory results must be most perfect. In many of the lamps this regulation is still wanting, and lamps lacking the above essentials, that are put together without regard to any electrical laws, with the hope that chance may make them work, produce a hissing and hammering noise that is disagreeable when silence is required, and are not to be recommended for any purpose.

However well the regulation, due to the electrical and mechanical part of the lamp, they cannot regulate the minute accidental variations in the structure of the carbons which causes a shifting of the arc or chasing, and as the arc flies around the direction of maximum emission will change with it. These fluctuations produce immense variation in the intensity of the light changing back and forth from 400 to 2,000 candles. Great improvements have been effected in the homogeniety of the carbons, and the time is not far distant when the flickering will be entirely removed.

The mechanical and electrical regulating devices are all that could be desired, and at present the light is not too irregular to be adopted for purposes of projection. With any good regulation, results may be obtained that far exceed in brilliancy any of the old methods employed. This matter of increased intensity is of great importance, especially in large public halls, where in many cases the picture is enlarged many hundred times without regard to the diminished light produced by means of the oxyhydrogen light.

In considering the application of the electric light as a source of illumination, it is very important to notice just what position the carbon poles must occupy in relation to certain requirements.

For outdoor illumination the axes should coincide, that the crater formed in the upper carbon may act as a reflector, and thus produce an increased downward illumination. Advantage is taken of the crater-like reflection to cast the rays at variable angles in a given direction.

To obtain the best effects for lantern projections the carbons are arranged that the axis of the upper carbon coincides with the edge of the lower carbon farthest from the condenser. In this position of the carbons the light will be concentrated upon one side and radiate freely in front, and will be cut off from behind, with little escape at either side. From this it follows that many different results can be obtained, depending upon the position of the carbon.

CLASSIFICATION.

It is more or less difficult to make a classification of arc lamps in their present state, or divide them into a few distinctive types. The old classification divided them into monophotal and polyphotal. In the former the electromagnet system, which produces the adjustment of the distance of the carbons, is traversed by the main current and is adjusted for a constant current. This prevents a number of lamps being placed in series, as the approach of the carbons is produced by mechanical means independent of the current. Polyphotal lamps are adjusted for a constant resistance of the arc. This is effected by placing the regulating apparatus in a shunt of the main current, which is also supplied with a cut-out device to short-circuit the lamp in the event of a disconnection in the arc. The objection to this classification is that one would be transferred to the other by an alternation in the winding of the coils. The better or later division is to class them either as series or parallel, which is dependent upon electrical conditions rather than mechanical. We may again subdivide them as a matter of convenience into: 1, hand regulation; 2, actuated by a spring (clock-work); 3, train of wheels and gravity; 4, differential and gravity; 5, clutch and dash pot; 6, electro motor; 7, focusing; 8, electro magnet and dash pot; 9, lever movement.

The most important consideration is simplicity of construction and sensitive motion of carbons, with speed to allow of instantaneous adjustment. These conditions are changing at each variation of resistance, which alters with the change of temperature in the conductor, and this again varies the potential, so that it is impossible to keep the arc constant. For any increase in the current the wire coils are heated with an increase of resistance in the lamp. To regulate these variations and to secure the proper proportions we meet with colliding difficulties and are confined to narrow limits in order to reconcile them. The necessary features in construction of a lamp are: 1, striking mechanism or separating the carbons; 2, feeding; 3, replacing, to put in new carbons (trimming); 4, moderating, to prevent carbons striking or hammering; 5, change over for two carbons; 6, cut out; 7, clamps for carbons; 8, driving power, which may be clock-work, gravity, weights, electro magnets, and electro motors.

The operation of an arc lamp consists of two movements: First, the withdrawal of the carbons or striking the arc, which is caused by a stout wire coil placed in the main circuit; second, the approach of the carbons, which is brought about by a thin wire coil of high resistance placed in the shunt.

There is also added a cut-out circuit, which consists of a shunt coil and a series coil. These are so wound as to help each other's magnetic power, and the series coil must itself be a shunt to the main circuit of the lamp. As the carbons burn away the arc gets longer and there is an increase in the resistance, this diminishes the current's strength in the magnets and the carbons descend until they meet and again form the arc.

The design of the lamp depends upon the condition with which it is to be supplied with current. That is, whether it is supplied by a constant potential with variable current, as is furnished by the Edison Company, or low tension current, that is having a voltage of 115 to 120 volts; or whether it is fed from a variable potential and constant current of high voltage, as is used in series arc-lighting. This current is known as the high potential, and the voltage runs in most cases from 1,000 to 3,000 volts. The objection to the latter is that to make any adjustment of the lamp the current must be turned off, and the lamp cannot be handled with the current on without danger, possibly attended with fatal results. The current used for projection should be the low tension, for with this the lamp can be handled without danger and all the adjustments may be made while the lamp is in operation.

When using the low tension current it is necessary to have some resistance in the circuit, when operating with one lamp, to cut down the voltage and deliver the proper amount of current. This resistance may be either coils of wire or low resistance lamps placed two in series and these in parallel. With four or six of these lamps the proper voltage will be delivered to the arc regulator with a current of from ten to twelve amperes. This form of resistance is more compact and the lamps are now made for this special purpose.

The great advantage over all other methods of illumination is its small cost per candle power, its intensity, whiteness, and parallel rays. These properties make it especially well adapted for purposes of projection, as it admits a larger number of rays to pass through the optical center of the condenser.

The intensity of the arc light has been variously estimated at from 400 to 2000 candle power. With a variable arc this will take place, but for purposes of projection this objectionable feature has been removed. With a proper position of carbons these changes in the intensity of the light fall within narrow limits, and the fluctuation due to the mechanical movements in the lamp is small, as the interval of the feed is about two seconds. The intensity of the light when the carbons are arranged, as described for projection, is from 1,200 to 1,500 candle power.

It is essential that the wires used to deliver the current to the regulator should be large enough to prevent heating, as all the heat must be made visible at the carbon points and none lost in the wires. It is better to have a separate set of wires starting as near the mains as possible with proper cut-out and fuses.

Estimates will be furnished by the company for this, as the work must be done by those skilled in the art, otherwise the proper conditions may not be fulfilled.

I have avoided using electrical and mathematical calculations, and to some this may seem a strange omission, while to others it will, I hope, make the article more readable.

The Eikonogen Developer.

BY F. C. BEACH.

IT is very nearly a year since this new developing agent was introduced to the photographic world; that it has rapidly grown into favor on its own merits is attested by the increasing number of plate manufacturers who are recommending it as superior to the pyro developer, advising its use if the best results are to be obtained.

It is seldom a new developing agent is so favorably received, since it is hard to overcome prejudices in favor of old-time developers, but the advantages of eikonogen are so manifest to any one who tries it fairly that it frequently converts the most conservative at once.

It is an extremely simple developer, and, unlike pyro, will develop the latent image without the presence of an alkali, that is, as commonly understood, for we think it is the presence of the sodium salt in the sulphite of soda that supplies the alkali element in a small degree. It has been found, however, that a plain solution of eikonogen, without sulphite, will develop a plate.

The varied experiences of those who have given the developer a trial show that it does not work alike in all hands, which may be probable because of the different grades of preserving chemicals used. The best form of developer we have used is made with the clear pale green crystals dissolved in a perfectly chemically pure solution of sodium sulphite (Merck's C. P. crystals), is what we prefer. When mixed this gives a pale green solution, perfectly clear and very vigorous. We find this solution, if placed in a darkened room, keeps clear for a long time.

To make the stock solution, simply dissolve two ounces of sulphite of soda in forty ounces of warm distilled water, and add one ounce of eikonogen. By stirring with a rod it is soon dissolved. Where it was formerly advised to mix the alkali (carbonate of potash solution, three ounces dissolved in eight ounces of water) with the eikonogen, it is now recommended to begin the development with the simple plain eiko diluted one-fourth with water, until it has permeated through the film, then after the image has started, or is too slow in coming out, add to two ounces of developer twenty minims of the alkali, or carbonate of potash solution. By pursuing this course the minim amount of alkali introduced into the developer prevents the appearance of alkali fog, keeps the solution from getting thick, and reduces to a minimum the tendency of the plate to frill.

During development more or less particles of the film along the edge of the plate will become detached, and if the solution is warm some of the gelatine will dissolve, which will cause the developer to thicken perhaps after the development of two or three plates, hence it is advisable to frequently filter it and to make good the loss by adding a little fresh eiko. The strength and activity of the solution is thus maintained.

When a series of plates have been developed, instead of pouring away all of the developer, some of it should be filtered and preserved in a small bottle kept tightly corked, for use in mixing with fresh developer, especially when time exposures are to be developed, since it has the same effect as the addition of a bromide (that is, aiding in producing density) without retarding the development.

A correspondent interested in the subject complains that he has difficulty in obtaining density, is troubled with frilling, and notices that the solution rapidly darkens after use, though kept in a tight-stoppered bottle. He suggests that the first difficulty may be due to too large an amount of alkali in the developer, and the turning of the developer, possibly, to an impure grade of sodium sulphite. His supposition is very nearly correct.

Want of density is sometimes due to too weak a solution of eikonogen, or in not leaving the plate in the developer long enough. The rapid change of the solution is accounted for by the use of insufficient sodium sulphite, or of a poor grade of the same.

From experiments it has been determined that the larger the amount of sulphite in the developer the slower it works.

It is rather interesting to note the varying quantities advised by different makers of plates. Our correspondent has gotten up a tabulated statement which shows clearly the differences alluded to, based on the ounce standard:

									Remarks.	
	Eikonogen.	Sodium Sulphite.	Potassium Carbonate.	Sodium Carbonate.	Potassium Bromide.	Distilled Water.	Glycerine.	Potassium Ferrocyanide.	Sodium Sulphite, gr. to the oz. of solution.	Potassium Carbonate, gr. to the oz. of solution.
	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.		
Formula of manufacturers of eikonogen, .	1	2	15-16		1-16	45			17 1-5	9 1-7
Seed Dry Plate Co., ...	1	6	1½			60			43 2-3	10¾
Cramer Dry Plate Works, ...	1	2⅔	1⅓			53			22	11
Eagle Dry Plate Works, for time exposures,	1	2	6			128			7	20 31-56
" " " " instantaneous expo.,	1	2	1			30			29	14½
Harvard Dry Plate Works, ...	1	2	2			80			11	11
Allen & Rowell Co., ...	1	4	2			80			22	11
" " " for instantaneous expo.,	1	4	2			40			43 7-10	22
" " " bromide paper, . .	1	3	2			128	1		10¼	6 53-64
" " " lantern slides, . .	1	5	1	1		128	1	½	17	3¼
" " " average for plates, bromide paper, and lantern slides,	1	3 1-9	2⅓			74⅓				

Most of the formulas are based on 437 grains to the ounce; taking that as a standard and summing up the number of grains to the ounce in the six separate formulas, of the sodium sulphite and carbonate of potash, then taking their average, the amount of sodium sulphite for the eikonogen developer is found to be 24 grains to each ounce, and carbonate of potash 11 grains to the ounce.

No satisfactory reason is given for the unusual amount of carbonate of potash recommended in the Eagle plate formula; experience shows that it would have a tendency to fog the plate or to frill it if the gelatine is soft.

During the hot weather of the summer eikonogen crystals have been observed to change in color from a pale clear green to a brown-black tint, even though sealed in bottles, excluded from the outer air. When dissolved such altered crystals make a dark green solution, but the power of the eikonogen does not appear to be lost. It is only in looks that it seems to be defective. This change may be brought about by heat, but as yet no reason is advanced, except that it is known that eikonogen which has been made for some time gradually discolors. It is to be presumed that further investigation will decide what is the actual cause of the discoloration, and doubtless before many months a way will be found to prevent it.

We are informed by the manufacturers that the discoloration will be prevented or checked if the salt is emptied from the package and spread out, so that the air may have access to it. We are also advised that a dark green solution of eikonogen may be clarified by the addition of a few drops of a saturated solution of bisulphite of soda. We dissolved 480 grains of the bisulphite in two ounces of water, and ascertained that half a dram (30 minims) added to one ounce of the dark green eiko solution was sufficient to change the color from green to a light red, but it did not appear to make the solution any more transparent.

Applying this altered solution to a bromide print we were unable to develop the picture after five minutes' immersion, except to see a slight image. A few minims of carbonate of potash solution were added, then the print developed out with moderate rapidity. The color of the developer was also altered from red to green again.

It would seem from this experiment that the addition of sufficient bisulphite of sodium to the developer to change the color is not advantageous. That it undoubtedly shows the action, was manifest. We think it may be used to advantage in mixing up the original developer, and probably one ounce will equal in preservative quality that of two of sulphite of soda. We shall experiment further in this direction.

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EDITORIAL COMMENT.

Mottled Negatives.—Quite recently we have had submitted to us a number of negatives which were marked by a singularly mottled appearance, accompanied by the request that we should give an explanation of their presence. While we were cogitating on the best answers to make to these inquiries, there appeared in the *British Journal* an editorial on this very point which goes so straight to the point that we cannot do better than to reproduce its substance. The mottlings are clearly traceable to one of two sources, a quiescent condition of the developer during development, or to imperfect or insufficient washing before fixation. In the development of a plate it is important that the tray should be occasionally rocked in order to bring fresh portions of the solution into activity. When an extra quantity of either of its constituents is added to a developer, the addition should not be made while the plate is in the tray. Either the plate should be removed from the tray or the developer should be poured off into a graduate and the addition then made. In either case sufficient time should be allowed for the solution to become perfectly homogeneous, as it were, before the plate is subjected to its action. If these precautions are taken, there will be little danger of mottling a plate during development.

But it is perfectly possible to produce the mottling after development and before fixing. As every one knows, the developing action continues even after the plate is removed from the developer. Unless, then, the developer is quickly and evenly removed, mottling is pretty certain to put in an appearance. The common method of simply giving the plate a rinse under the tap is a direct invitation to the enemy. The developer is most speedily washed out immediately under the stream running from the tap, less quickly in a circle around it. The result is circles of irregularly increasing density with a weak spot in the middle. The difficulty is not removed by the use of a rose. In this case a number of small circles of less density may be produced. Streaks across the plate are undoubtedly caused by partially washing a plate and setting it up to drain before fixing.

The safest method of washing is to transfer the plate from the developer to a tray of clean water, and to rock the tray until the greater portion of the developer is removed, finishing up with a good rinse under the tap. Upright tanks for fixing or washing, while a great convenience, are likely to produce mottlings unless the precaution is taken to churn the plates up and down for a few moments when first placing them in the tank. If more care were taken in these particulars, we should see more clean negatives.

Lenses for Landscape Work.—We are pleased to see so good an authority as Mr. Chapman Jones in a recent number of *Photography* advocating the use of the single lens in landscape work, where great rapidity is not essential. Theoretically the argument is all in favor of the single lens as against a rapid rectilinear. It is not so expensive, it is lighter, and it has fewer glass surfaces to get dirty or give false lights by reflections. As to the distortion produced by it, it is practically nothing, if a lens of a focal length equal to at least the longest side of the plate be chosen. For several years we have used a ten-inch single on architectural subjects without detecting any appreciable curvature in the straight lines. One of the most careful and thoughtful amateurs in Boston recently expressed his intention of working with single lenses hereafter. Only let the single be a good one, not a cheap affair, and it will not be the fault of the lens if good work is not produced.

Printing through Colored Glass Screens.—Some years ago we made a series of experiments on the effect which printing through colored glass had upon the toning of silver prints. The results seemed to warrant the publication of the method in one of our photographic journals, and they were so published, without, probably, receiving any great amount of notice.

Mr. Edward A. Golledge has recently published in the *Photographic News* a series of experiments in the same direction, and his results are so similar to our own that we deem it right to call the attention of our readers to the matter. The object of the experiments in both cases was to find some method by which warm blacks could be obtained in silver prints, more particularly on mat surface papers. Blue, ruby, orange, yellow, and green glasses were used, but the best results, so far as the obtaining of black tones was concerned, were had by printing under deep green glass in direct sunlight, and toning in the following bath:

Borax, ...	1½ drams.
Uranium nitrate, ...	4 grains.
Chloride of gold, ...	3 grains.
Water, ...	24 ounces.

This bath will tone at least two dozen whole plate prints. Before toning the print will be of a rich, purplish brown, and the paper should be printed until the detail in the shadows is lost. The toning bath is allowed to act until the brown tint is no longer visible by transmitted light. Mat prints require only a short preliminary rinsing before toning. Prints on albumen paper should be thoroughly washed, and a pinch of carbonate of soda will do no harm, particularly in the case of ready sensitised paper. Strong, vigorous, prints can be obtained from weak negatives by printing under yellow glass. The toning bath may be used several times if it is occasionally strengthened with gold.

Woman's Work.—This department is unavoidably omitted this month, but will be resumed in September.

Acid-Sulphite Solution.—According to Herr Lanier the acid-sulphite of sodium, which is now recommended as a valuable addition to the fixing-bath to prevent discoloration, is easily made by dissolving 65 drachms of neutral sulphite of sodium in 34 ounces of water and adding 2½ ounces of muriatic acid. One or two ounces of this compound are added to every quart of the fixing bath.

Himly's Eikonogen Developer.—Capt. Himly recommends the following:

Water, ...	1000 parts.
Glycerine, ...	100 parts.
Metabisulphite of potassium, ...	2 parts.
Bisulphite of sodium, ...	75 parts.
Eikonogen, ...	12 parts.
Carbonate of potassium, ...	60 parts.
Yellow prussiate of potassium, ...	40 parts.

Suggestions for making up Formulas.—At the recent Convention of British Photographers the committee on weights and measures made a number of sensible recommendations which we reproduce here with the advice that they be adopted by all writers on photographic matters. The recommendations are as follows:

A.—Weights and Measures.—If the English units be used, the minim and the drachm should not be employed at all. All weights should be expressed either in grains and decimal parts of a grain, or in ounces and fractions of an ounce; all measures in fluid grains or in fluid ounces and fractions of a fluid ounce.

B.—Formulæ.—Formulæ should give the number of parts of the constituents. by weight or measure, to be contained in some definite number or parts. by measure of the solution. The mixture can then be made up with (1) grammes and cubic centimeters, or (2) grains and fluid grains, or (3) ounces and fluid ounces, according to the unit selected.

The standard temperature for making up solutions should be 15 degrees centigrade, or 62 degrees Fahrenheit.

Formulæ should give the quantities of the constituents to be contained in x parts of the finished solution, and not the quantities to be dissolved in x parts of the solvent. When a solid dissolves in a liquid, or when two liquids are mixed, the volume of the solution or mixture is not, as a rule, equal to the sum of the volumes of its constituents. The expansion or contraction varies with the nature of the solids and liquids and the proportions in which they are brought together. In making up a solution, therefore, the constituents should first be dissolved in a quantity of the solvent smaller than the required volume of the finished mixture, and after solution is complete the liquid, cooled if necessary to the ordinary temperature, is made up to the specified volume by the addition of a further quantity of the solvent.

It is very important to specify in the case of liquids, whether parts by weight or parts by measure are intended. The equivalence between weight and measure holds good only in the case of water and liquids of the same specific gravity.

Whenever possible, formulæ should give the quantities of the constituents required to make up 10, 100, or 1000 parts of the solution.

When a mixture (*e.g.*, a developer) is to be prepared just before use from two or more separate solutions, it is desirable that the proportions in which the separate solutions have to be mixed should be as simple as possible, *e.g.*, 1 to 1, 1 to 2, 1 to 3, 1 to 10.

English vs. American Amateurs.—The *Beacon* quotes Mr. L. J. Bolton, now in this country in the interests of Messrs. Hazell, Watson & Viney, publishers of *The Amateur Photographer*, as saying that English amateurs are more enthusiastic than their American brothers. If so, more is the pity, we say. Not many years ago we were fortunate enough to meet many of the English amateurs at home, and we certainly found that they worked harder at photography than the average American amateur. There is less disposition in England than in America among amateurs to make the camera pay its expenses by doing work for friends slightly under the figure asked by the professional. There is also a larger leisure class there than here, and so more time can be given to picture making than the average American can put into it. With us it is largely a matter of an hour now and then, a brief vacation, snatched from the cares of a busy life.

The fact that three American amateurs recently carried off the honors at a representative exhibition, in competition with the best known and most medaled English amateurs and professionals, is proof enough that we occasionally produce a winner of the photographic "blue ribbon."

Mr. Bolton is doubtless right in his statement of opinion, and the greater enthusiasm of the English camerist probably explains the reason why the average of British camera-work is decidedly higher than that done here, where the prevailing tendency is to use photography as a means of obtaining pictorial reminiscences of pleasant vacation trips rather than as an aid in the making of pictures.

The English Convention at Chester.—Our English cousins have been holding their third annual convention, this time in the quaint old city of Chester, walled and arcaded Chester, the gateway to North Wales and beautiful Llangollen. Everything seems to have passed off in the best style. The mayor made an address of welcome, Mr. Pringle, the retiring President, made a characteristic address, followed by a well-conceived address by the incoming President, Mr. Bothamley; reports were made by the committees on lenses and weights, measures and formulæ; Mr. Pringle had something to say on photo-micrography, Mr. Bothamley spoke on the subject of orthochromatic methods, Mr. Gambier Bolton read an interesting paper on photographing animals, but the strongest paper presented was Mr. P. H. Newman's "Imagining and Imaging," in which Dr. Emerson was rather roughly handled, and not altogether fairly. Mr. Newman evidently fails to understand the true bone of the naturalistic contention, and so attacks only the accidents of the thing, and does not touch the real heart of the controversy at all.

One thing in President's Bothamley's address strikes us as being particularly well put and worthy of the notice of the powers to whom will be left the choice of the subject for the next competition to our own convention. We refer to that part of the address in which Mr. Bothamley spoke of illustrating poems by photography, which he speaks of as an American invention, and compares to the potato beetle. Well, we Americans have taught our English cousins a few things in the past. Perhaps we may teach them how to use the camera as a means of illustrating poems. But it is a matter worth thinking over whether enthusiasm may not be carrying us too far. Mr. Bothamley is right when he says, "We must be content to admit that there are certain classes of subjects which come rightly within the scope of the painter, but are unfit for treatment by photography. When we see photographs which profess to represent those human emotions which we commonly hold sacred from intrusion, a sense of unfitness more than counterbalances any pleasure arising out of mere technical artistic skill." Speaking of attempts to illustrate certain poems by photography, Mr. Bothamley says rightly, "When the outcome is photographs of such scenes as a girl in agony at the death bed of her father, done, of course with the help of models, it is an outrage upon one's sense of the fitness of things." As a whole we must conclude that the annual convention of the British photographers is much more dignified and serious than its American protoype. There is more solid work about it, less of the dealer, and absolutely nothing of the "Art Gallery," with its Hiawathas and Evangelines and Enoch Ardens. Perhaps we would do well to study the English methods more closely.

Celluloid in Photo-Gelatine Work.—In the Collotype process plate-glass is commonly used as the support for the printing film. This is often broken in the press, and the preparation of such plates is a matter requiring quite extensive drying arrangements. It seems to us that celluloid presents many of the advantages of glass with none of its drawbacks. There would seem to be no reason why a sheet of celluloid should not be coated with a plain gelatine solution, dried spontaneously, and after sensitizing in the bi-chromate bath, as in the carbon process, be mounted on a wood block for the printing press. In fact we know from actual trial that the thing can be done, and that the results are in no way inferior to those obtained when glass is used. The celluloid is first given a coating of water-glass and stale beer. For convenience of inking up, it is best to mount the celluloid on a wood block, but this is not essential to success. If any of our readers are interested in the process, we would advise them to try celluloid. If they do not care to take the trouble of preparing the sheets, let them sensitize any of the flexible films in the market on a bichromate bath. We have obtained some good results in this way, which comes very near M. Balagny's rapid Collotype process lately mentioned in the English journals.

A Kodak Among the Fish.—A writer in the Elmira *Telegram* describes his success in photographing trout at the state hatchery at Munford, N. Y. The feeding machine was set at work chopping meat, thus attracting large numbers of the speckled beauties into clear, shallow water, where they were successfully photographed with a Kodak.

Illustrating Poems.—The illustration of poems by photography is one of the new applications of the art, and is to be brought out at a competitive exhibition to be held at the Washington convention this month. Each competitor may select from the poem of Enoch Arden such portions as they may wish to illustrate. Among those intending to compete is Miss Catherine Weed Barnes. The lines she will illustrate are:

FIRST PICTURE.

"So these were wed and merrily rang the bells,
And merrily passed the years, seven happy years
Of mutual love and honorable toil."

SECOND PICTURE.

"Uphold me, Father, in my loneliness
A little longer! aid me, give me strength
Not to tell her, never to let her know."

THIRD PICTURE.

"I charge you now,
When you shall see her, tell her that I died
Blessing her, praying for her, loving her."

The photographs are required to be 11 x 14 in size.

◆

ENGLISH NOTES.

BY THOMAS BOLAS.

Monochromatic Light for Developing.—Several arrangements have been proposed from time to time for producing a steady "Sodium Light" for photographic purposes, the several sodium lines standing so close together in the spectrum that such light is virtually monochromatic, and among the best known of these arrangements is the apparatus of Herr Gaedicke in which the flame of a Bunsen burner is kept so constantly supplied with a trace of sodium compound that a steady monochromatic light results. In Gaedicke's arrangement, an asbestos ring about half an inch internal diameter is first dipped in water and then in a powdered mixture of sodium chloride (common salt) and sodium carbonate (washing soda). The asbestos ring is then supported about an eighth of an inch above the aperture of a Bunsen burner, so that the lower part of the flame *just touches* the inside of the ring. Such an arrangement—one that any person can readily fit up for himself, using a spirit (alcohol) lamp, if gas is not available—gives a pleasant and safe light for the dark-room, provided one takes the precaution of not allowing any part of the asbestos ring to become red hot, in which case the light would cease to be monochromatic. Moreover, if the ring is placed too high in the flame so as to become over hot the salts become anhydrous very quickly and the yellow sodium flame fails. If properly adjusted the lamp should burn satisfactorily for about an hour after one dipping of the asbestos ring. A considerable improvement in the arrangement has recently been suggested by Dr. E. F. Marx, who finds much advantage to result from using bromide of sodium instead of chloride of sodium. The bromide does not decrepitate, gives a brighter light, and volatilizes more steadily. Equal parts of powdered bromide and carbonate answer well, and in case of asbestos not being at hand a ring cut out of pumice stone may be used.

Prints on Drawing Paper.—In photographic printing there is just now a tendency to go outside that conventional smoothness which has been so long looked upon as almost an attribute of a photograph, a tendency no doubt largely due to the inroad which bromide paper and platinotype have made upon the supremacy of the albumen print; and photographers, both amateur and professional, are finding that silver prints made on rough drawing paper are very generally acceptable, even in the case of small size portraits. Very little divergence from the beaten path is required in making such prints. The drawing paper is floated on a bath made by dissolving four grains of gelatine and five grains of common salt to the ounce of water, the floated side being marked, and when dry it is floated on an ammonia nitrate bath: Silver nitrate sixty grains, water one ounce, ammonia just enough to dissolve the precipitate first formed. Other operations are as in the case of albumen prints.

A New Transparent Film for Negatives.—An insoluble gelatine film has been introduced here by Obernetter to compete with celluloid, and although quite clear, transparent, and much less absorbent of water than other samples of insoluble gelatine which I have seen, it is sufficiently absorbent to curl slightly under the first action of the developer and to become somewhat placid. These circumstances and the fact that it requires special precautions in order to insure that the negatives shall dry flat, seem to place it a long way behind celluloid as regards convenience of working.

The Photographic Convention.—The adoption in England of the transatlantic notion of an annual convention of photographers has been largely the result of the efforts of Mr. J. Trail Taylor, but in our English convention the amateur element is notably predominant, and this was especially so in the case of the meeting at Chester, which took place last month. Professer Bothamley, in his presidential address, touched on the question of the production of photographs in colors, and in alluding to experiments on sub-chloride of silver in which something, which, by a great effort of the imagination, may be regarded as such a photograph, made reference to the results obtained by the Austrian experimenter Verescz, who seems to have obtained encouraging results by using the modifications of silver discovered by Professor Carey Lea, but in referring to a reproduction by Verescz and Vogel of the red color as being the only one distinctly reproduced, and even in this case the red is rather copper colored than of the vermilion tint possessed by the original.

A committee on lens standards, appointed by the convention, after much consideration approved the Photographic Society's standard of *f*-4 as the unit for diaphragms, and while similarly approving of the standards for lens flanges determined upon by the Photographic Society, the committee saw the need of adopting additional standard sizes, now that hand cameras with small lenses are so common. They also propose intermediate sizes in a few cases. The standard diameters are to be 1, 1¼, 1½, 1¾, 2, 2½, 3, and 3½ inches, and after that are to advance by inches, the measurement to be taken on the outside of the male screw fitting into the flange. In every case the shape of the screw-thread is to be the Whitworth (angle of 55° and rounded top). The rate or pitch is to be 24 threads to an inch for flanges up to 3 inches diameter, and for larger sizes the rate is to be 12 threads to an inch. Most of the papers read to the convention were of the sort involving expressions of opinion and personal notion rather than definite experimental or technical results—papers such as "Animal Photography," by Gambier Bolton, and "Imagining to Imaging," by P. H. Newman.

The Efficiency of Various Plate Backings.—Mr. W. E. Debenham has undertaken an exhaustive investigation on the efficiency of the various backings used to prevent halation, and has given us a ready means of estimating the efficiency in the different instances. The hypotheneuse of a right-angled prism is coated with patches of the various backings, and the image of a light is viewed as reflected from each in succession and in proportion as the image is less brilliant, so much more efficient is the backing agent concerned. Mr. Debenham made photographs of the various reflected images, using an illuminated paper screen as the source of light, and he found that a backing of caramel or burnt sugar made up with gelatine or gum, to be far more efficient than bitumen or any of the backings in common use, a fact explained by the refractive indices of caramel or gum being near to that of crown glass. Although plates ought to be so thickly coated as not to require backing for ordinary work, there are special cases where it is necessary to have a backing, and that of the most efficient kind, and Mr Debenham's caramel backing will especially facilitate the work of those employing photography in astronomical or other scientific research.

Some Chemical Actions of Light.—In a communication to the Chemical Society Mr. Alexander Pedler describes some results of his investigations regarding the action of light on phosphorus and on water in the presence of chlorine. When phosphorus was dissolved in bisulphide of carbon, and the solution was sealed in a tube and exposed to tropical sunlight, a reddish deposit was formed in a few minutes, and this soon covered the sides of the tube. The deposit consisted of the yellow and the red allotropic forms of phosphorus both being insoluble in bisulphide of carbon. If alcohol or other liquid containing oxygen is present, the altered phosphorus is largely oxidized at the moment of formation. The action of light on chlorine water is well known to liberate oxygen, and some time ago Wolters proposed to take advantage of this reaction for measuring the intensity of light. Mr. Pedler finds the reaction to be unsuited for photometrical use, as the action depends much on the amount of water present, being only considerable when the water is in relatively enormous excess—about 400 times as large a quantity as is indicated by theory. Moreover if the light is feeble a considerable proportion of hypochlorous acid is formed. Ordinary chlorine water brought into full tropical sunshine actually effervesces from the liberation of oxygen.

INDEX RERUM PHOTOGRAPHIC.

By Dr. John H. Janeway, U. S. A.

[Continued from page 276.]

The paper should then be allowed to float for 80 seconds and no longer, gradually raise and remove it by one corner, and then suspend it by two corners to dry in a place as free from dust as possible. When completely dry it should be rolled between steel rollers and kept perfectly flat. Double albumenized paper is prepared by coagulating the first layer by steam, and treating it again in the same way.

ALCOHOL—$C_2 H_6 O = 34$—Spirits of wine; rectified spirits; ethylic alcohol. Prepared either from the sweet juice of the grape, solutions of cane sugar, various kinds of grain, and the potato, by fermentation. The sugary liquids are converted into alcohol and carbonic acid gas. The latter escaping, the alcohol remains mixed with water. It is separated from the latter by distillation, 10 per cent. of water passing over with the alcohol. By redistillation with quicklime or anhydrous copper sulphate the last trace of water disappears, and it is then called absolute alcohol. For almost all ordinary purposes a nearly absolute alcohol can easily be obtained by the addition of anhydrous sulphate of copper (the sulphate made so by drying with strong heat until nearly white) to the alcohol of the shops, and kept in well stoppered bottles. Absolute alcohol is a colorless, mobile liquid of pleasant smell and burning taste, and of highly intoxicating properties, burns readily with a bluish flame, and its vapors form with air an explosive mixture. It mixes in all proportions with water, and quickly absorbs moisture from the air Should be kept in glass bottles with carefully ground glass stoppers. Absolute alchohol contains but one or two per cent. of water; rectified spirits, sixteen per cent. of water. Proof spirit is prepared by diluting five parts of rectified spirits with three parts of water.

ALCOHOL, METHYLATED—Prepared by adding 10 per cent. of wood naphtha to alcohol. This is done to prevent its use internally (very seldom in this country). The photographic uses of alcohol are either as a solvent or drier. Such is its affinity for water that it soon abstracts that liquid from emulsions, wet gelatine plates, or soaked carbon tissues. It is also an ingredient of several developers. Fusel oil, mostly an amyl alcohol, is frequently present as an impurity in alcohol; detected by its giving a faint red tint to a solution of nitrate of silver exposed to the sunshine. For the per cent. of absolute alcohol in 100 parts of spirits of different specific gravities consult tables in various books on chemistry.

ALDEHYDE ACETYL—$C_2 H_4 O$—Formed by the oxidation of alcohol. Colorless volatile liquid having the odor of sweet spirits of niter. It is a powerful reducing or deoxidizing agent, and causes metallic silver to be deposited as a bright mirror, and is, therefore, when present in photographic solutions, injurious. Possiby hypo has in many cases been unjustly blamed when aldehyde acetyl was the cause of that mirror appearance upon the negative. Acetic acid is liable to contain a trace of it, and it almost always appears in the nitrate of silver bath used in the wet collodion process. Treating the bath to sunlight in an open dish for a few hours removes it.

Alkalies—A class of caustic bases, soda, potash, lithia, ammonia, etc., whose distinguishing characteristics are solubility in alcohol and water, uniting with oils and fats to form soap, neutralizing and forming salts with acids, precipitating metals from acid solutions, reddening several vegetable yellows, and changing reddened litmus to blue.

Fixed alkalies—Potash, soda, etc.
Volatile alkalies—Ammonia.
Vegetable alkalies—Usually called alkaloids.
Alkaline development—Refer to development.

Allotropic—Gr. ἄλλος (allos), other, and τρόπος (tropos), direction. A substance is said to be allotropic when it possesses the power of existing in two or more conditions distinct in their physical and chemical relations. Oxygen, carbon, and phosphorus are prominent examples of this peculiarity.

Alpha Paper—A rapid printing paper coated with a gelatine emulsion, and has about the same rapidity as bromide paper, but with a greater variety of tones. For some time the process of preparation was kept secret. It may be prepared as follows, G. D. Wall's formula:

Solution 1.

Silver nitrate	100 grains.
Citric acid	100 grains.
Distilled water	3 oz.

Dissolve both solids in the water and filter through well washed filter paper.

Solution 2.

Sodium chloride (pure table salt)	17 grains.
Potassium bromide	40 grains.
Citric acid	100 grains.
Nelson's gelatine	40 grains.
Distilled water	3 oz.

Allow the gelatine to swell in cold water for thirty minutes, heat to 150° F., add salts and acid, and then in the dark room pour solution No. 1 into No. 2 always. Constantly stirring, add to the mixture, while still hot, Nelson's gelatine grains 100, and Heinrich's gelatine 100 grains, previously swollen in cold water. Stir till dissolved and pour out to set; wash in the usual way for all emulsions. Remelt and coat the paper. If the paper is soaked in boiling water for a minute, a glass plate slipped under it, lifted out by the plate, squeezed in order to get rid of the superfluous water, the operation of coating is simplified very much. A broad brush can be used in coating. Exposure can be made with a good lamp flame at a distance of 18 inches. For development the prints are immersed in water till limp. Two solutions are required for warm black tones. No. 1, called the normal ferrous oxalate developer, is composed as follows:

Neutral oxalate of potash	576 grains.
Bromide of potassium	4 grains.
Distilled water	5 oz.

Solution No. 2.

Ferrous sulphate	360 grains.
Sulphuric acid	3 drops.
Distilled water	5 oz.

Add one part of No. 2 to seven parts of No. 1—not the reverse. For absolutely black tones take of

Sol. No. 1 (normal ferrous oxalate developer),	1 oz.
Sulphuric acid, s. p. 1·025	60 minims.

Brown tones can be produced by adding

Common salt	10 grains.
Citric acid	5 grains.

to every ounce of the normal oxalate developer. For still warmer tones give double the ordinary exposure and use the following:

Normal oxalate developer	1 oz.
Ammonia chloride	60 grains.
Water	1 oz.

Bright red tones can be obtained by the following process. Make the following solution:

Citric acid	385 grains.
Distilled water	2½ oz.
Liq. ammoniæ 0·880	4 drachms.

Take of this solution 140 minims, normal iron solution (No. 2) 45 minims, common salt 5 grains, and distilled water 5 drachms. Moonlight effects can be produced by developing to a warm black, clearing in the usual way, and then dipping the print into a weak solution of ferrocyanide of potash. This forms Prussian blue. This paper can be developed with a hydroquinone, potash, or soda developer. If thin, it can be intensified by soaking the print in a solution of mercuric or cupric chloride till bleached, well washed and redeveloped. If too dense, soak it in a cupric chloride solution and refix. The clearing bath into which the prints are immersed for one or two minutes is composed as follows: Alum 4 oz., citric acid 1 oz., warm water 80 oz., and they may be toned and then fixed, or toned and fixed at the same time. In the latter case the following solutions are required: Stock solution of gold: chloride of gold 15 grains, water 15 drachms. Toning and fixing bath:

Water	10 oz.	
Hyposulphite of soda	2½ oz.	avoirdupois.
Acetate of soda	½ oz.	"
Sulphocyanide of ammonium	¼ oz.	"
Alum, pulverized	40 gr.	
Stock solution of gold	4 drachms.	

The solution must be made in the order given. After toning and fixing, wash in the usual way.

ALUM—Several salts known under this common name, aluminium ammonia sulphate.

Ammonia Alum—$Al_2 (SO_4)_3 (NH_4)_2 SO_4 + 24 H_2 O$—Prepared by treating the ammonia liquor to roasted coal measure slate that has been previously treated to sulphuric acid. The appearance and properties of this salt are almost similar to the potash alum.

Aluminium Potassium Sulphate—$Al_2 (SO_4)_3 K_2 SO_4 + 24 H_2 O$—Common potash alum—A double salt formed by the combination of the sulphates of aluminium and potassium. Occurs in transparent crystals (double pyramids), soluble in ten parts of cold water, or in one-third their weight of boiling water. Insoluble in alcohol. The solution has an acid reaction and an astringent taste. Exposed to the air, the crystals absorb ammonia, forming a basic sulphate, and present a white appearance. In photography it is mainly employed to give firmness to the gelatine film. In combination with citric, sulphuric, or hydrochloric acid, it is used to clear films discolored in pyro development; to extract the hypo from fixed negatives and prints. Strongly recommended by some as an addition to the hypo bath, on grounds which I think are not well taken. When alum is called for in any formula, the common potash alum is intended.

Chrome Alum—$Cr''' (NH_4) (SO_4)_2 12 H_2 O$—A double salt prepared by dissolving the hydroxide of chromium in dilute sulphuric acid, forming chromic sulphate, which unites with the sulphates of potassium or ammonium, forming magnificent double salts of deep claret color, and they are analogous in composition to common alum ; the chromium in this place replacing the aluminium. Recommended by some as superior to common alum for hardening and clearing the film of gelatine negatives, etc.

ALUMINIUM—Al = 27·3—Remarkable for its low specific gravity. It is nearly as white as silver and is capable of assuming a high polish. Prepared by decomposing aluminium chloride with potassium or sodium. The process of preparing it has been rendered much cheaper in the last few years, and it is therefore much more employed in the manufacture of delicate apparatus and ornamental articles, and some have used it as mounts for lenses, a practice to be encouraged for various reasons. Some of the alloys of aluminium are, however, more generally applicable, more especially the alloy with copper, which is remarkable for being similar in appearance to gold—alloy known as aluminium bronze.

AMATEUR - Literally one who cultivates any study or art from taste or attachment without hope of a pecuniary recompense. The enormous strides which the art-science of photography has made in the last few years are very largely due to this class of workers.

AMBER—A yellowish resin resembling copal, found as a fossil in alluvial soils with beds of liquids, and also on the seashore in many places. It forms the basis of a fine varnish.

AMBROTYPES—Collodion positives on glass—A process now, unfortunately, almost obsolete, especially so when their great beauty is remembered. A very simple and inexpensive process. Briefly, the glass plate well cleaned and its surface well rubbed with powdered French chalk to ensure the film remaining in adherence, dusted, and then coated with collodion. After draining off the surplus it is placed on edge to set, which occupies about ten seconds. It is then dipped into the silver bath (nitrate of silver, grs. 30–35, distilled water, oz. 1, acidified by 1 drop of nitric acid to each ounce of solution.) Some little care is here necessary to remove the oily streaks that sometimes appear ; replacing in the bath generally is all that is required. When they have disappeared, drain the plate and place it in the holder, and expose. The exposure must be longer than that required for a gelatine plate. To develop, pour a sufficient quantity of the developer—

Protosulphate of iron	15 grs.
Nitrate of potash	10 grs.
Acetic acid	1 drachm.
Water	1 oz.

on the plate, holding it by one corner along the edge, so as to assure its flowing over the surface, by a quick sweeping motion of the wrist. When the high lights appear to be fairly out, immediately wash by pouring water upon the surface of the plate from a small jug and apply the fixing bath, a ten-grain solution of cyanide of potassium, either pouring it on the surface or immersing in a vertical bath; then wash well. The most brilliant results are gained by giving a rather short exposure and a rather prolonged development. Mount the picture on black velvet, or with black varnish if desired, always on the back.

AMMONIA—$NH_3 = 17$—When pure is a light, colorless gas of pungent odor, and so soluble in water that a pint of water at ordinary temperature will dissolve 730 pints of gaseous ammonia. This solution —NH_4HO—is known as the liquor ammoniæ fort., and should have the specific gravity of 0·880. The ordinary liquor or aqua ammoniæ of the shops contains but 10 per cent. of gaseous ammonia, and has a specific gravity of 0·936. The gas escapes so quickly under ordinary circumstances that even the act of pouring it from one bottle to another perceptibly weakens it. It is, therefore, wise to dilute the strong ammonia with an equal bulk of water as soon as purchased, and keep it in a well ground glass-stoppered bottle Ammonia gas is readily prepared by heating in a glass flask a mixture of quicklime and ammonium chloride. But the bulk of the ammonia and ammonium salts of commerce is now prepared from the ammonia liquor of gas works. It turns moist red litmus to an intense blue, makes yellow turmeric paper brown, and for these reasons, and for its property to escape from solution, ammonia is known as the "volatile alkali." Ammonia is always present in the air, found in freshly fallen snow, joins with various acids, forming ammoniacal salts, greatly resembling corresponding compounds of potassium and sodium. In photography ammonia is largely used abroad to render the pyrogallic acid developer alkaline, thereby greatly increasing its activity, to fume sensitive albumen paper, either when freshly prepared or what is called the ready sensitized, immediately before printing, and also added to the water used in washing prints previous to toning, and other purposes.

AMMONIUM BICHROMATE—$(NH_4)_2Cr_2O_7 = 252$—Prepared by adding chromium teroxide to ammonia, or by neutralizing 1 part of chromic acid with ammonia, and then adding another part of the acid and evaporating to crystallization. Soluble in water. A little of the solution of ammonia bichromate added to a solution of albumen or gelatine, and exposed to the light, renders these substances insoluble

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

New England Lantern Slide Exchange.—A meeting of delegates from the clubs in the New England Lantern Slide Exchange was held on board the Steamer Philadelphia while returning from the excursion on Narraganset Bay, Tuesday, June 17, 1890. R. C. Fuller, of the Providence Club, called the meeting to order, and Dr. G. E. Francis, of Worcester, was chosen chairman. The following clubs were represented: Boston Camera Club, H. N. Sweet; Lynn Camera Club, W. H. Drew; Lowell Camera Club, G. A. Nelson; Worcester Lantern Slide Club, Dr. G. E. Francis, Springfield Camera Club, John Leshure; The Camera Club, Hartford, E. H. Crowell; Photograph Section of the New Britain Scientific Association, Fred Wessel; Providence Camera Club, R. C. Fuller.

A letter was read from C. R. Pancoast, of Waterbury, regretting his not being able to be present, and containing some valuable suggestions in regard to the work of the Exchange. That the Exchange had been successful during the last season, and had accomplished its work of starting new enthusiasm in the matter of slide making, was the opinion of all present. Mr. Sweet moved that the Providence Club continue to act as Secretary of the Exchange for the coming year, and it was so voted. Suggestions regarding rules for the coming season were discussed at length by the different members.

Mr. Pancoast's view that all slides must be the work of members of the club exhibiting same, and that the number of slides should not exceed the limit of fifty, were unanimously agreed to. His suggestion about cutting out all Kodak and vest camera pictures was opposed.

Mr. Sweet explained that if we refuse the Kodak slides we must necessarily refuse all instantaneous hand camera work, and in view of the extended improvement in size and equipment of the hand cameras, pictures might be made with such apparatus that would be worth exhibiting.

His remarks were approved by the other members, and the only qualification for admission of slides was that they be the best pictures, and that they be carefully selected by the committee of the club exhibiting them. Attention was called to the rule regarding "interesting particulars concerning the picture." Mr. Nelson suggested that the clubs should be more particular about giving all information they could in reference to the slide.

Mr. Drew called the members' attention to the box used by the Lynn Club last year, asking that the clubs adopt that or one practically the same for the coming season. After some discussion it was adopted.

Mr. Leshure spoke of the matter of loaning the sets in the Exchange to individual members of the club, and it was decided that they should not be so loaned, and should not be exhibited outside the club rooms except under the auspices of the club holding them.

Mr. Fuller suggested it would be a good plan for each club to report upon each set of slides, as they examined them, selecting the five best pictures, so that, if desirable, it would be very easy to get a representative set of pictures at the end of the year to exchange either here or abroad. This plan was incorporated in the rules which were all unanimously adopted. The annual assessment was fixed at $3.00 for the present season.

Dr. Francis then spoke of the increased interest in this matter of Lantern Slide making, and as a good method for exchange of slides with foreign countries, he proposed that each slide maker should duplicate his slides in film negatives, which could so easily be mailed to all parts of the world without the expense and risk of breakage of the ordinary slides. The idea is a good one and was well received by the members as being the next advance in this interesting branch of photography. The meeting then adjourned.

Rules of the New England Lantern Slide Exchange, Adopted at the Meeting held Tuesday, June 17, 1890.—This Exchange shall be limited to clubs in the New England States, and shall not exceed twelve in number.

The Executive Committee of the club, chosen to manage the Exchange for the year, shall decide upon the application for membership.

Each society shall pay an annual assessment to cover necessary expenses, to be paid before November 1st.

Each society shall furnish every year fifty slides. Negatives and positives must be the work of its own members.

All slides must be of the standard size of 3¼ x 4 inches properly matted and mounted. The picture shall be centered and made perpendicular to the four-inch side of the plate. Openings in the mat may be of any shape, but must not exceed 4⅛ inches on the longest diagonal. Each slide must be numbered on the lower left-hand corner to correspond with an accompanying invoice, giving as many interesting particulars as possible concerning the slide, and a descriptive text of the picture.

On November 1st of each year every society in the Exchange shall be prepared to forward its slides according to direction of the Secretary of the Exchange, and on the first day of each month following the slides shall be forwarded until all in the Exchange have made the entire circuit.

Any society entering the Exchange, after the slides have started, will be assigned a place in the circuit, and will receive the slides that have not passed it on their rounds.

No slides shall be exhibited except under the direction of the club holding the same.

No slide shall be withdrawn after entering the Exchange until it has been the entire circuit.

Express charges shall be paid by the society receiving the slides.

No damaged slide shall be forwarded. Breakage must be promptly reported to the Secretary of the Exchange.

Clubs are requested to furnish their slides in boxes containing fifty each, practically the same as that used by the Lynn Club in the season of 1889.

Each club will select the five best slides in each set and report the same to the Secretary of the Exchange.

At a meeting of delegates from Boston, Lynn, Lowell, Worcester, Springfield, Hartford, New Britain, and Providence Clubs, held on the Steamer Philadelphia, Tuesday, June 17, 1890, it was voted that the Providence Camera Club act as Secretary of the Exchange for the ensuing year; that the assessment for the coming year be three dollars.

The Hoboken Camera Club.—The fall outing of 1889 of the Hoboken (N. J.) Camera Club proving such a success in many ways, the members repeated the trip and tramped over the same shooting ground in search of the beautiful for the spring outing of 1890.

Conashaugh, Pike County, Pa., is eternally fixed upon the glass of our memory and negative upon negative to the number of nearly two hundred are but a part of the exhaustless resources of forest and glen captured by the members who engaged in the two outings of October 5 and 6, 1889, and May 24 and 25, 1890. A public exhibition of these prints was given on Friday evening, June 27, in the club room and called forth many favorable comments from the large number of visitors who inspected them in the limited quarters in which they were exposed.

The club became an incorporated body in January last and immediately began to make a movement toward securing a home of its own as its present quarters are ridiculously inadequate for its growing needs. A plot of ground has been secured and paid for, on 11th Street, near Willow Avenue, a most desirable location, and subscriptions to the amount of $2,500 thus far obtained toward the erection of a new club house, the building of which will be started this coming fall. The membership has now reached forty-two, which includes four honorary members. Semi-monthly photographic trips are made by the members to short distance points within twenty miles of New York and are enjoyable occasions, costing but little both in time and money, and yielding much pleasure and profit.

The building committee invites suggestions and would be pleased to receive plans and ideas from the amateurs of the United States relative to improvements in construction of developing and meeting rooms.

The California Camera Club entertained an audience of some 1,700 people, in Odd Fellows' Hall, San Francisco, on Friday evening, June 27, 1890, with a lantern slide exhibition, entitled "Through Japan with a Camera." The slides were from negatives made and collected by that enthusiastic and popular amateur photographer, Dr. Edward H. Williams, of the Baldwin Locomotive Works of Philadelphia, who kindly loaned them to the club. The slides are highly colored, and are beautiful specimens of photographic skill, both as regards technique and quality. The collection embraces some three hundred slides, of which one hundred and fifty were exhibited, covering every phase of Japanese scenery, and the characteristics peculiar to her people.

Long before 8 o'clock, standing room was at a premium, the large audience filling every available space in the hall.

The entertainment was opened with an Overture — Selection from Mikado — by Blum's Orchestra. President George W. Reed welcomed the audience in a few well-chosen and happy remarks, and introduced Dr. C. H. Steele, the lecturer of the evening. Dr. Steele's travels in Japan some years ago, gave him an opportunity to study the Japanese people, and their characteristics, and these studies proved highly interesting and instructive, as slide after slide was thrown upon the screen.

The lecturer was a very pleasant and distinct talker, finding many opportunities to recite witty reminiscences that kept the audience in continued laughter.

After every thirty slides were exhibited, the lights were turned up, to rest the audience, and to admit the late comers, who were not permitted to enter the hall while the slides were being exhibited. Blum's Orchestra discoursed Mikado during these intermissions.

The club intends giving at least one such public exhibition every month, and trusts by this means to keep photography prominently before the public.

The Society of Amateur Photographers of New York.—Since the renting of the new quarters at 111, 113, and 115 West Thirty-eighth Street, the committee having the fitting of them up in charge have been busy in arranging and superintending the dark-rooms. The form of the room is that of the letter *V*, the bend of the *V* being the front on Thirty-eighth Street, the two arms forming an east and west wing. The west wing will be the meeting room, while the east contains a perfectly equipped dark-room arranged on the stall system, large enough to accommodate from six to ten persons at a time, fitted with electric lights, special washing and hypo tanks, electric light contact exposing box, convenient shelves, racks, etc. The arrangements were designed chiefly by Mr. A. L. Simpson. Convenient to the dark-room are long rows of lockers and a bromide room for enlarging purposes. There will be cameras for making lantern slides and for copying. The front room is fitted up as a parlor and library, in which are on file copies of all the American and foreign photographic journals. There are toilet rooms conveniently arranged. It is expected ultimately to have a sky-light and studio built between the open arms of the *V* which faces the north. At present the rooms are larger and more complete than any other similar institution in the country. The next regular meeting will occur on September 9th. In the meantime members continually use the improved facilities, and as a rule regard the quarters as being very much superior and more pleasant than those the society was expected to occupy in West Thirty-first Street.

The Interchange of Illustrated Subjects.—Mr. William Garrison Reed having associated with him Wilbur C. Brown as assistant manager has been authorized by the Boston Camera Club to take charge of the above named interchange, which is designed to circulate among American and foreign clubs special illustrated lectures. The object is a very worthy one, and is an instructive way of conveying useful information. Mr. Reeds states that the collection of illustrated lectures for circulation among amateur photographic societies in this country is as follows: *Glimpses of California*, by the Pacific Coast Amateur Photographic Association; *Illustrated Chicago*, by the Chicago Camera Club; *In and About Columbus, Ohio*, by the Columbus Camera Club; *The White Mountains of New Hampshire, and Illustrated Boston*, by the Boston Camera Club. Besides these, others in preparation which it is expected will be ready, are: *In and About San Francisco*, by the California Camera Club; *Under the Shadow of Tamalpais*, by the Pacific Coast Amateur Photographic Association; *Illustrated Liverpool*, by the Liverpool (Eng.) Amateur Photographic Association. All are now offered to the amateur photographic societies of this country, freely, for use in giving public entertainments. Each set will be allowed to be kept by the exhibiting society for two weeks,

and the circulation will begin October 1st. Each society participating will be requested to report to the undersigned whatever sums it pays for transportation or repairs; at the close of the season the total cost of each and all circuits, with the general expenses of the manager, will be made up, and assessments levied on the several societies sufficient to defray the whole, and equalize the expenses, in the proportion that the number of sets each uses is to the total used by all. "Boston," "The White Mountains," "In and About San Francisco," and "Columbus," are in duplicate; one set of each will continue in circulation in this country as long as there is any demand. "Glimpses of California," and "Chicago," will be shipped to England, in June, 1891, for a fifteen months', or longer, tour of that country. In answer to numerous inquiries, it is proper to say here that there is *no membership* in this Interchange. Any society desiring to make use of any of the sets, may be gratified upon making application to the manager. It is hoped, however, that all such will, in time, contribute similar efforts. Special directions for shipping and packing are given, and societies desiring further information should address Mr. Reed at 25 Kilby Street, Boston, Mass.

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BOOKS AND EXCHANGES.

The midsummer number of *Outing* is full of delicate suggestions of field and forest. It is as wholesome as the breath of the pines. Every lover of nature should enroll himself a subscriber to *Outing*.

The thirteenth part of Doctor Fabre's *Photographic Encyclopædia* gives full descriptions of the various printing processes with iron, uranium, mercuric, lead, and chromium salts, including the cyanotype and carbon processes.

From the Bausch & Lomb Optical Company, Rochester, N. Y., we have received a catalogue of lenses, prisms, camera levels, and shutters of their manufacture. The reputation of the firm for conscientious work is well known. The new shutter is a great improvement over the model of last year.

AN ILLUSTRATED CATALOGUE.

The well known house of W. H. Walmsley, Ltd., Philadelphia, sends us a copy of their revised and classified catalogue of photographic goods, which is sufficiently complete to serve as a trustworthy guide to the intending purchaser. A large number of cameras, plate holders, tripods, etc., are described and illustrated, as are also the Walmsley "Handy," and "Improved" photo-micrographic cameras. The catalogue will be sent to any address on receipt of ten cents.

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PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

Thermo Paper.—In a recent number we called the attention of our readers to a ready-sensitized silver paper on which satisfactory brown tones could be obtained without any toning bath. In consequence the demand became so great that the supply at the importers was speedily exhausted. Messrs. Barker & Starbird, the sole American agents for the sale of the paper, immediately ordered a new importation, which has now been received. The paper is a great time and labor saver, and the tones it gives on the application of heat, while not quite so brilliant as those obtained in the usual way, are nevertheless eminently satisfactory and we advise our readers to test the new paper for themselves. Further particulars will be found in our advertising pages.

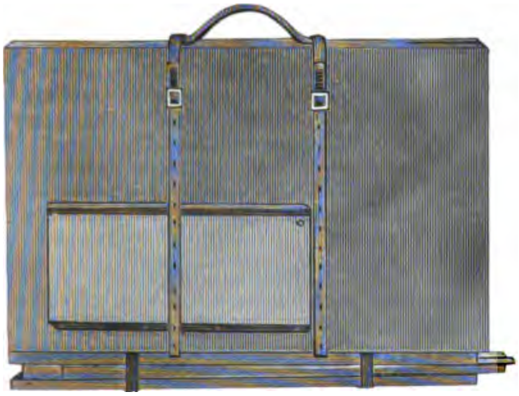
FIG. 1.

Markley's Portable Dark-Room.—To those camerists who turn aside from the beaten track and seek to study nature in her native wildness, a compact and easily transported arrangement for developing or changing plates is a blessing undisguised. Mr. J. H. Markley has sent us one of his new portable dark-rooms, and after some practical experiment with it, we take pleasure in illustrating it for the benefit of our readers.

The cuts make extended description unnecessary. Fig. 1 shows the box closed for transportation. In this shape it forms a box 24 inches long, 15 inches high, and 4 inches deep. It is strongly and compactly made of light wood, and is finished in cherry or mahogany, or leatherized.

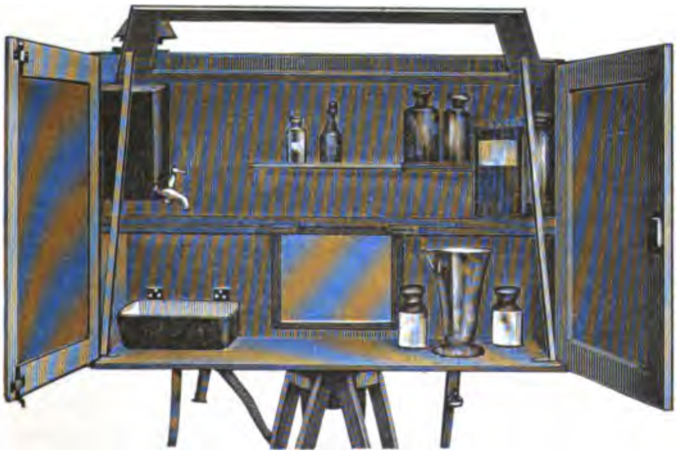
FIG. 2.

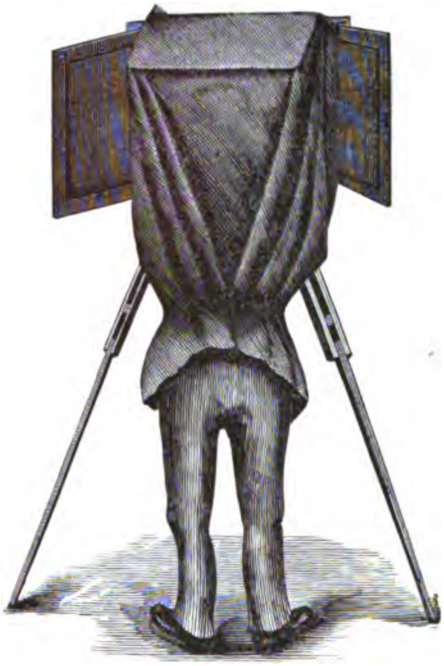

FIG. 3.

In use it is mounted on a tripod, the folding doors are open, disclosing a large leather hood, which covers the head and shoulders and is tied about the body. The interior fittings are shown in Fig. 2, which shows the arrangement of bottles and water tank, the folding shelf which increases the working space, the folding frame by which the top of the hood is held up, and the lighting arrangement, two frames of ruby and yellow glass, either of which can be used singly if desired.

Fig. 3 represents the box in use. The important matter of ventilation has been carefully attended to, and we feel confident that the box would prove a valuable addition to the outfit of the camper-out, or the tourist photographer, in those cases where a little extra luggage can be carried. With it a trial plate can be developed now and then, and plate-holders filled in perfect security. Those stay-at-home camerists who are not blessed with a completely appointed developing room will find this a practicable substitute. We would advise the purchase of the larger size on account of the additional room which it affords.

The "Shadowless" Printing Frame.—Sam C. Partridge advertises a novelty in the way of printing frames; a light, compact and strong metallic frame which casts no shadow on the prints, an improvement which will be appreciated by all amateurs.

Two prominent English experimentalists have recently died, the Rev. T. F. Hardwich and Mr. H. B. Berkeley. Both of these gentlemen had been connected with photography since the days of collodion, and both were indefatigable and earnest experimenters. Mr. Hardwich at one time made a thorough study of collodion, and of late years he had devoted much time and study to the improvement of the optical lantern. He was a frequent contributor to photographic literature and the author of a manual of photographic chemistry. Mr. Berkeley was also an enthusiastic experimenter in photography, and the use of sulphite of soda as a preservative agent in the developer was one of his many practical discoveries. In common with Mr. Willis, he worked out the platinotype method of printing to its present high standard of excellence.

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United States Photographic Patents

Issued in July, 1890.

JULY 1st.

20,000—Design Patent, Photographic Album; M. F. Harte, Brooklyn, N. Y.

431,120—Photographic Washing Apparatus; J. L. Morris, Lawrence, Kansas.

JULY 15th.

432,255—Camera Stand; H. D. Waite, Watertown, N. Y.

432,410—Album; C. Jaeger, New York, N. Y.

432,411—Album; C. Jaeger, New York, N. Y.

JULY 22d.

432,783—Photo Engraving Apparatus; W. A. Blomgren, Chicago, Ill.

432,903—Apparatus for Automatically Photographing, Developing, and Delivering the Finished Pictures; J. Sacco, Paris, France.

JULY 29th.

432,974—Plate-Holder for Photographic Cameras; W. F. Carlton, Rochester, N. Y.

432,990—Roll-Holder for Photographic Films; George Eastman and P. H. Yareman, Rochester, N. Y.

432,999—Photographic Shutter; G. F. Green, Kalamazoo, Mich.

433,020—Roll-Holder for Photographic Films; S. D. McKellen, Manchester, England.

433,070—Camera; E. R. Bullard, Wheeling, W. Va.

433,333—Support for Sun-Print Frames; A. J. Dawdy, Goshen, Ind.

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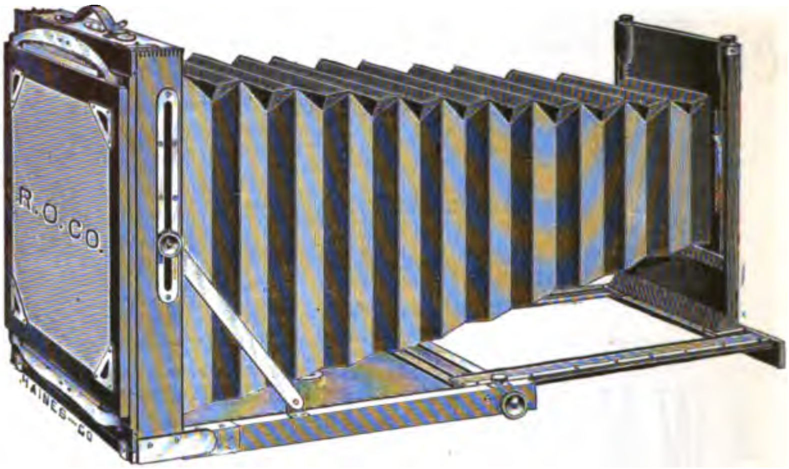
List of Dark-Rooms Open to the Use of Amateurs.

LURAY INN—*Luray, Virginia.*
PROSPECT HOUSE—*Blue Mountain Lake, Hamilton Co., New York.*
HIGH FALLS HOUSE—*Dingman's Ferry, Penn.*
THE STANLEY HOUSE—*Lake Joseph, Muskoka, Ont.*
CASCADE LAKE HOUSE—*Adirondacks, N. Y.*
HOTEL CORONADO—*San Diego, California.*
THE RAYMOND—*East Pasadena, California.*
SAN MARCO—*Santa Barbara, California.*
DEL MONTE—*Monterey, California.*
SPENCER HOUSE—*Niagara Falls, New York.*
SLIDE MOUNTAIN HOUSE—*Big Indian Catskill Mountains, New York.*
FORT WILLIAM HENRY HOTEL—*Lake George, New York.*
PROFILE HOUSE—*White Mountains, New Hampshire.*
THE WESTPORT INN—*Westport, New York.*
BREEZE LAWN—*Hunter, New York.*

The "Universal" Camera.



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PARTIALLY FOLDED.

FOLDED.

The Universal Camera is a modified English Pattern and is the most compact camera in market, the 6½ x 8½ being but 2⅝ inches thick when folded and weighs but 5 pounds, and has a draw of 20 inches.

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Is put up in unsealed packages, so that it may be examined by the purchaser.

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Works by any of the regular formulas.

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Toning and Fixing Compound

Combines toning and fixing in one simple operation.

Does not deteriorate with age, or spoil with use.

Uniformly gives results in freshness, delicacy, richness of tone, and every other respect, equal to those of the most elaborate formulas.

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Photographic Goods 641 ARCH STREET,

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Makes a Picture Two and-a-half inches Square. Size of Camera, 4x4x6 inches, outside measurement. Using ordinary Dry Plates. Easily handled and manipulated by any one.

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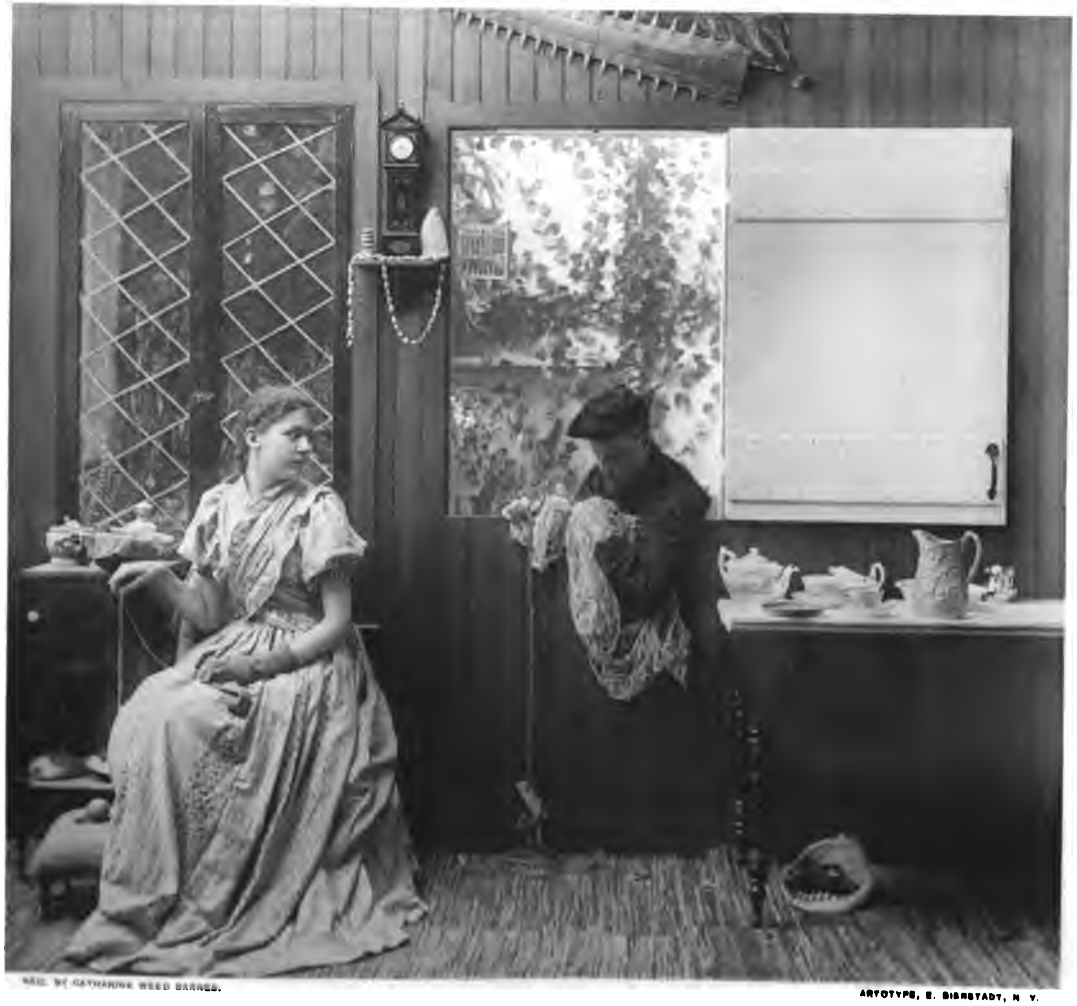
1—2m.

"So these
were wed
and merrily
rang the bells,
And merrily
passed



the years,
seven happy
years
Of mutual love
and honorable
toil."

NEG. BY CATHARINE WEED BARNES.

ARTOTYPE, E. BIERSTADT, N. Y.

ENOCH ARDEN.

THE AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., SEPTEMBER, 1890. No. 9.

Our Illustrations

THE frontispiece is the first in the series of three pictures sent by Miss Catherine Weed Barnes in competition for the grand prize at the convention held recently at Washington, by the National Photographic Association of America. They are designed to illustrate scenes from Tennyson's "Enoch Arden." Of the six competitors the prize was awarded to Mr. George H. Hastings, of Boston, Mass. Under the head of Woman's Work, in this number of the magazine, Miss Barnes describes her experiences in preparing these pictures. Such work is excellent practice for amateurs, and it is to be hoped that more will undertake it, as they, more than professionals, have the needful leisure for careful and thoughtful work.

The cut of the Flower Garden, Prospect Park, is from a half-tone block made by the Art Photo-Etching Company, New York, from a negative made by Mr. George R. Sheldon, Jr., with a R. O. Co.'s single view lens, and is a very good specimen of the quality of work which can be done even with a cheap lens.

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The Dangers of Hand Camera Work.

BY W. H. BURBANK.

TO THE camerist of a speculative turn of mind, the probable effects of the rapidly increasing use of hand cameras upon photography in general, opens up a profitable field of inquiry. Within the brief space of [illegible] years the hand camera has almost entirely driven the [illegible] and [illegible] boxes from the field, and it is now almost an indispensable part of the outfit of every tourist and summer lounger. The ingenuity of [illegible] has been taxed to the utmost to produce a type of camera which leaves as little as possible to the intelligence of him who uses it, [illegible]

[illegible] happy years [illegible] of health and competence [illegible]

“So these were wed and merrily rang the bells, And merrily pass[illegible]

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There can be no question about the utility of the hand camera in the hands of one able to use it with discretion, judgment, and decency. To the artist it is of great assistance in securing rapidly fleeting effects of light and shade, not easy of retention in the memory, but of exceeding value in the studio. To the general public its use affords a ready means of securing pictorial, if not picturesque, representations of the scenes of the summer's outing, studies in street life, bits of nature, which else had not been taken. The hand camera may be said to have opened up new possibilities and to have done much towards hastening the coming of the time when the whole world will lie within easy reach of one's hand as he sits by his own ingle nook.

To him who uses the hand camera with sober thought and serious purpose, there can only come good, but to him whose only care is to beat the record on "snap shots," there will surely come harm, and this in one or both of two ways, as Mr. Andrew Pringle has forcibly pointed out in a recent article in *Photography*. According to Mr. Pringle, and my own experience agrees with his, the dangers attending the use of the hand camera are:

1. "Under-exposure to such an extent as to give rise to either hardness and want of detail, or—equally hurtful, but more insidious and more certain—want of aerial effect, air, atmosphere, by whatever name we may call it."

2. "The much more serious danger of creating total carelessness to artistic effect in photography. We believe that any of our senses will be dulled by promiscuous and over-frequent use as well as by deliberate abuse, and we do not hesitate to say that the artistic sense will be vitiated by gross and continued disregard to the artistic effect, till finally custom becomes a second nature, and we grow not only habitually careless of art, but actually incapable of it."

To these two dangers I would add a third, that of the camera being degraded into a means of caricaturing one's friends by securing them in various ludicrous or uncomely positions, than which nothing can be more contrary to the spirit of our gentle art.

Any one who has had ever so slight an acquaintance with the hand camera will easily recall instances in which his negatives have been ruined for really good pictorial work by lack of detail due to under-exposure. Nothing is more annoying than to miss success by only a hair's breadth, but this is just what the hand-camera worker is constantly doing.

As to the artistic danger, in my opinion Mr. Pringle has by no means over-estimated it, and its possibility is a very grave impeachment of the hand camera. I have been in the way of examining a large number of prints from negatives made in this short and easy way. I have made not a few myself, and I do not hesitate to say that not more than one in a hundred would attract and hold an artist's eye for a moment, for the simple reason that they lacked that indefinable but easily recognized quality which we call artistic feeling. I am not of the number of those who hold that unless a print is artistic it is less than nothing. I recognize the value which the crudest representation of nature has for him who made it, but I do hold that the artistic value of a print is the highest value, and that lacking this it fails to be a picture, and so holding, I believe that an instrument which places additional difficulties in the way of securing artistic results is to be used with caution, and only after one's pictorial style has been formed by much study of nature on the focusing screen of a larger box. And even when pleasing results are obtained with the smaller box, the training is not wholly good, since vastly more skill is required to compose a picture on a 10 x 12 focusing screen than on a 4 x 5, and errors in composition are more evident in the larger print.

Certainly the indiscriminate use of the hand camera is fraught with danger to art, and in the interests of good and true photography the hand-camera man should be warned of it.

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The Photographers' Convention.

BY F. C. BEACH.

THE eleventh annual convention of the Photographers' Association of America was held at the National Museum, in Washington, between August 12th and 15th inclusive. Judging from the inconvenient arrangement of the space and the smallness of the exhibits, the convention may be said to have been convened more with an idea of dedicating the memorial to Daguerre, in commemoration of fifty years of photography, than for any results of practical nature. It was in reality a Daguerre Convention. The business and scientific meetings were held in the lecture hall of the museum, which is very well adapted for the purpose. We shall endeavor, as concisely as possible, to give a brief story of the work of the convention. According to the published programme, the address of welcome, after the convention was opened, was to have been made by an amateur, Mr. R. Dickinson Jewett, of the Washington Camera Club, but owing to sickness he was obliged to be absent. Professor O. T. Mason, curator of the National Museum, welcomed the convention, instead, in a witty and instructive speech, which was characterized by President J. M. Appleton, with the remark that there was "no welcome like a welcome welcome." In the way of reports by committees was a lengthy one on the "Progress in Photography," prepared and read by W. H. H. Clarke, of St. Louis, Mo., editor of the *St. Louis and Canadian Photographer*. Among the points he touched upon was the fact that "photography is ever progressive," that an

Austrian had recently announced his ability to photograph in colors, but his operations were really based upon the researches of M. Carey Lea on the photo-compounds of silver salts, and as yet it was a question whether any real advance had been made. In pigment printing he referred to a newly designed invention of F. E. Ives, of Philadelphia, which he thought might be of value. He regarded photography as a handmaid to art, and noticed that artists are making more use of the camera than ever before as an aid in producing outlines of sketches and models. Other points were the noticeable improvement in photographic lenses and lens mounts, the applications of electricity in photographic apparatus, how all the sciences are aided by photography, especially astronomy, the value of photo-mechanical printing as utilized by newspapers, the peculiar automatic cameras recently devised, the usefulness of photography in educational institutions, and the need of creating an "Institute of Photography" in this country. Speaking of developers, "eikonogen" was favorably thought of.

The financial reports showed a healthy condition of the treasury. The city of Buffalo was voted as the place for the convention to be held next year. Then after the announcement of a nominating committee and a committee of awards, and delivery of the annual report by President Appleton, in which he strongly advocated the building of a permanent home for the Association, the proceedings of the day terminated.

On the second day the matter of prices was discussed, and a special committee of ten was appointed to consider the subject further. A permanent bureau of information was created whereby all photographers desiring to make changes can obtain a list of business opportunities. It is to be placed under control of the second vice-president. In the afternoon a very interesting address was made by Thomas Wilson, professor of prehistoric anthropology, on "Types of Beauty." He spoke earnestly of the assistance photography has afforded science, and after classifying the various races of men, he paid the following tribute to women:

> In determining the characteristics of the various types of mankind, it becomes necessary to have living specimens, and here it is that photography can aid anthropology. One of the great anthropologists of this century, in Paris, has been making a collection of the various types of mankind, and he does it by means of photographs. He has discovered, or thinks he has, that the type of origin—the race to which the party originally belonged—is better preserved among women than among men, at least that the evidences and characteristics are better preserved among women than among men. So he has made his collection from among women, and, to make it more attractive and worthy, he declared it to be his intention to choose only the beautiful women for his types. Therefore, his is a collection of types or standard of beauty, and this is made by a series of photographs.

He urged photographers to make a collection representing their ideal types of women.

Professor T. C. Mendenhall, superintendent of the coast and geodetic surveys, and as such also superintendent of weights and measures, made a lengthy argument in favor of the adoption of the metric system weights and measures.

A very interesting paper on "Posing and Composition" was read by L. G. Bigelow, of Chicago, which was followed by practical demonstrations in posing by L. J. Ullman, of New York. His subject was a young lady with a pretty face and a wreath of flowing tresses. She was dressed in a short white dress and wore a broad brimmed straw hat. Mr. Ullman placed her in many novel and artistic attitudes, being applauded after each change. The advantage of skillful posing was very clearly demonstrated. Other papers were read, "Lighting," by E. P. King, of Providence, R. I., and "Exposure," by T. E. Huston, of Connelton, Ohio, and one on the "Transparent Film," by G. D. Milburn, of Rochester, N. Y.

In the evening "Art Criticisms on Photography," being a stereopticon exhibition of various copies of photographs designed to show different ideas in posing and lighting, was given in the lecture hall. Mr. J. Scott Hartley commented on each picture, and invited criticism from the audience which was freely indulged in. As a rule most of the slides were too hard and did injustice to the original picture. Towards the end three slides of Miss Catherine Weed Barnes' "Enoch Arden" representation were thrown on the screen but were not allowed to be criticised because the judges had not made public their decision. They were, however, greatly liked. A McAllister double lantern, operated under the direction of the museum photographer, Professor Smillie, supplied an excellent light and worked without any hitch. Mr. Hartley, not being much of a lecturer, was heard with difficulty in many parts of the hall. There was also too much sameness in the pictures to interest a general audience. As compared with the work of the different amateur clubs it was very poor.

The third day was the liveliest of any, and opened with a curious communication, sent by a photographer in Mount Vernon, N. Y., in which he alleged that the stock houses sold goods at a higher rate to professionals than to amateurs, and he was obliged to buy his plates from the amateur if he wished to get them cheaper. Some wealthy amateur in the dry goods business was able to secure better terms than he. A resolution recommending the passage of the Torrey bankruptcy bill by Congress was passed. Then came in order the rather discouraging, doleful report of the Daguerre Memorial Committee made by its chairman, Mr. H. McMichael. He recited how the committee had endeavored to raise the fund by popular subscriptions of one dollar each, expecting that out of the estimated fifty thousand photographers six thousand would readily subscribe, out of pure patriotism. Committees were established in different parts of the country to solicit subscriptions, but very few did any effective work. It was not until the end of December that the committee decided upon the design, and after considerable discussion awarded the work to Mr. J. Scott Hartley, of New York, the artist sculptor. Pictures of the design were then sent out, but he noticed that the western photographic press began to throw cold water on the project, which acted like a wet blanket on the committees in the west and crippled their work. Instead of raising $6,000, the estimated cost of the memorial, in a year as anticipated, the total amount was about $700, which, with the $500 appropriated in 1889 by the convention, made the total towards the credit of the fund amount to $1,200. The expenses had been $566.45. The Association had therefore to face a deficiency amounting to about $5,000.

Mr. W. H. H. Clarke criticised the action of the Association in trying to erect a memorial in such a short time. The sketch of the first design which he saw was not an artistic one in his estimation, and no one in his section of the country liked it. More time should have been allowed in the selection of a design, and when the committee agreed upon it, it should have been submitted to the Association for approval. This would have given more time to raise the subscriptions and been much more satisfactory. All the information he had obtained came from one outside source, and he had to take what was sent. Under the circumstances his criticism seemed quite just and did not help the cause of the committee along, but Mr. Pickerell, from New York, appeared, and stepping on the platform, made an enthusiastic speech which stirred up the audience. Among other things he said that we came here to unveil the memorial to Daguerre, that the Association appointed a committee to get up a memorial and put it in the National Museum this year. They had done their work well and should be sustained. It was time to throw off the wet blanket, and he hoped an earnest effort would be made by all to clear off the debt.

Mr. L. J. Ullman, of New York, praised Mr. Hartley's skill and reputation, and commended the design of the memorial and the labors of the committee. He urged that the members of the Association save it from disgrace by substantial subscriptions.

Mr. Gentile moved that the Association appropriate one thousand dollars, but it was rejected.

Mr. Stein thought if there was less talking and more earnest effort made in getting subscriptions, each one would have a chance to contribute toward the fund.

Dr. Elliott took the position that the committee should be sustained since it had done its duty toward the Association, and had put up a memorial worthy of the occasion. The committee had been mistaken in its judgment of the interest expected from the general public. The money of the Association should pay for the memorial, as it is stated on the base of it that it is erected by "The Photographers' Association of America." He subscribed personally twenty-five dollars towards the fund. Following his sensible remarks Mr. G. Cramer, of St. Louis, defended the committee, said they were able men and had done their duty. He urged that the Association do not allow the memorial to become its tombstone, but that every one be urged to contribute towards its success. He was willing to pay five hundred dollars, or a greater sum should any one offer to pay more. Then the interest in the memorial was aroused.

Mr. McMicheal, on behalf of Anthony & Company, subscribed five hundred dollars. Every few seconds the chair announced the subscriptions. Among the names mentioned were:

Mr. Entrekin, $100; G. Gennert, $50; Benj. French & Co., $100; C. H. Codman & Co., $100; Mr. Overpeck, $10; Bausch & Lomb, $20; Mr. Reinhart, of Denver, $50; *Photographic Globe*, $10; Sheehan & Simpkinson, $25; D. P. Thompson, Kansas City, Kansas, $25; L. W. Seavey, $25; G. D. Milburn, $25; President Appleton, $25; *St. Louis and Canadian Photographer*, $25; E. J. Pullman, $10; D. R. Coover, $5; Buffalo Actinic Paper Co., $10; S. L. Stein, $20; F. C. Beach for The American Amateur Photographer, $20; Ellington & Coover, $25; A. L. Pearson, $20; J. C. Edgworth, $10; Miss Catherine Weed Barnes, $20; E. M. Easterbrook, $10; *Photographic Herald*, $10; Mr. Stuber, of Louisville, Ky., $5; C. W. Hearn, $2; Eddy Bros., of Canada, $3; F. E. Hastings, $10; Ward V. Ranger, $10; Seed Dry Plate Co., $100, and numerous other smaller subscriptions. The total thus subscribed is said to have amounted to $1,900.

A vote of thanks was passed to the committee, and it was ordered to continue to use its best efforts to raise the balance due.

At a short meeting held in the afternoon, the election of officers took place, resulting as follows: President, George H. Hastings, of Boston; L. S. Stein, of Milwaukee, First Vice-President; W. Stuber, of Louisville, Second Vice-President; Dr. George Carlisle, Treasurer, and Willard O. Davis, of New York, as Secretary.

During the evening session a scientific paper, prepared by D. P. Tod, Professor of Mathematics in Amherst College, on "Automatic Operations of Photographic Apparatus," was read by Professor Loomis. The apparatus described consisted briefly of a number of valves operated by air pressure, which in turn operated shutters or plate-changing devices. The movement of the valves was regulated by a perforated strip of paper punctured with square or rectilinear holes, which, as it was drawn over a certain flat surface, allowed the air to act on the valves similar to the perforated sheet organ music, and thus to automatically operate the shutters and other devices on one or more cameras. As the perforated strip was drawn along with a uniform speed, it was possible to exactly time each exposure more accurately than in the ordinary way, and at the same time to easily and automatically bring a new plate into position. The apparatus had been successfully used in recent astronomical observations.

Mr. G. Cramer read an interesting paper on "Orthochromatic Photography," and advised the mixing of the color dye with the emulsion in preference to the use of the yellow screen. The advantages of these plates were that they brought out more distinctly objects of a yellow and red color than with the ordinary plates. The required exposure was double that of ordinary plates, and care had to be taken with the light in the dark-room. It was advised to use very little light in developing. Mr. T. C. Roche exhibited specimens of orthochromatic photography, and preferred to use the yellow screen.

An experimental test between two flash powders was made. Professor Taylor, microscopist of the agricultural department, explained that he had gotten up a new flash compound which, while much more highly explosive than gunpowder when touched off with a match, could not be discharged by friction or even by pounding it on an anvil. The principal ingredient was the carbonated silk of milkweed. He had never tested the photographic power of the light before. Cameras were arranged on the platform and two sets of negatives were made, President Appleton, Dr. Carlisle, and Mr. T. C. Smillie forming the group. To the eye there was considerable more actinic effect in the regular magnesium powder light than in the milkweed compound flash. We have not learned which gave the best negative.

Mr. G. L. Hurd, of Providence, R. I., read a short paper on "Retouching," dwelling principally on natural, artistic, and poor retouching. In general he was uncertain whether retouching had been very beneficial to the art. Mr. T. C. Fellows, of Philadelphia, read a paper on "Albumen Paper," Mr. O. H. Hetherington, of Chicago, gave a short but spicy talk on "Printing," and was followed by some humorous and instructive remarks by J. K. Clemons, of Philadelphia. Several papers were read by title, then the convention adjourned till the next day.

The last and fourth day was set apart for the Daguerre memorial dedication, though at the morning session before adjourning *sine die*, it was voted that a list of all the contributors and amounts subscribed to the Daguerre memorial fund be mailed to all photographers and manufacturers of photographers supplies in the United States. The memorial indebtedness was referred to the executive committee with power to act for the Association as it thought best. A special committee was appointed to report on plans, probable cost, etc., for a permanent building. The committees on awards reported as follows:

CLASS A.—A beautiful silver placque, mounted in plush, representing "Victory," for the best exhibit of genre photographs. Awarded to S. L. Stein, of Milwaukee.

CLASS B.—One gold, one silver, and one bronze medal for the best collection of portrait photographs. Awarded to Dana, of New York, first; J. Landy, of Cincinnati, second; and O. P. Scott, of Chicago, third.

CLASS D.—Heimberger & Sons, New York, gold medal; Miss E. C. Sears, of Boston, silver medal, and J. Zybach, Niagara Falls, bronze medal, for landscape photographs; Allen & Rowell, Boston, silver medal, for marine views; E. W. Lincoln, silver medal, and Geo. Hastings, bronze medal, for best collection of architectural views.

CLASS E.—F. T. Clarke, silver medal, and C. P. Wilcox, bronze medal, for best retouching.

CLASS F.—W. G. Kimball, silver medal, and Rothengatter & Dillon, bronze medal, for plain enlarged photographs.

CLASS G.—C. H. Codman, medal for best invention for photographers produced during last year, on an improved camera-stand.

CLASS H.—Lafayette, of Dublin, and J. Hanna, of New Zealand, for best foreign displays.

In the private awards, C. W. Motes, of Atlanta, Ga., took the Anthony prize of $100 for best plain enlargement, and A. A. Knox, of New York, $50, for best worked enlargements. C. E. Vredenburgh, of Elizabeth, N. J., took the $50 prize, offered by the manufacturers, for the best work with climax films. The air-brush prizes were won by P. Fleming, for best water-color painting, and C. Y. Waldeck, of St. Louis, for black and white portrait. The Knorr Manufacturing Company's prize of $100, for the best print on "diamond" albumen paper, was awarded to Rose, of Providence.

The President of the United States had been invited to attend the unveiling of the Daguerre memorial, but could not. The convention adjourned at noon. In another place we give a separate account of the exercises attending the unveiling of the memorial, and of the exhibits of the poem photographs and apparatus. The foregoing brief outline of the work of the convention shows it to be mostly of a business character, and that the aims of the Association appear to be tending in that direction rather than in the cultivation and promotion of photography as an art and science. In this respect it was a disappointment to those deeply interested, and goes to prove that there is a large field open to amateurs for the establishment of annual conventions conducted on a higher basis, whose results would be likely to be much more beneficial than those now obtained. The suggestion made at this convention that a building fitted up as a school or college of photography be created is most worthy, and we hope to see the movement grow.

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One Day's Outing.

BY GEO. L. STEVENS.

"A FIELD day for October? Of course we must have one!" was the universal opinion of the members of our Camera Club at the monthly meeting when the subject of a day's outing was suggested. But where shall we go? Several places were at once suggested, but failed to meet the approval of all, and as a majority of our members were unable to be away from business for more than one day, it was finally decided to spend one day on the "Old Boston pike" from Marlboro to Wayland, taking in as a side issue the Sudbury river and meadows, the very thoughts of whose water views was enchanting to those who living in a hill-town had little chance to secure "water-scapes," except on some such occasion as this.

The committee on conveyance secured a large roomy barge and four horses, also an accommodating driver who promised obedience to the wishes of all, a rather rash promise, as our party all told numbered thirteen. "Rather an unlucky number," the lawyer remarked, but then you know "camera cranks" are not, as a rule, superstitious, except as concerns exposure, development, and the like.

The day before our start was what one might call dubious, clouds and sunshine alternating, each seemingly in favor of retiring gracefully in favor of the other, but at the hour of retiring, the heavens, scanned by thirteen pairs of eyes, from as many different localities, showed a few stars and more than even chances that next day the sun would come out ahead.

The day dawned clear and cool, the leaves well off the trees and just the faintest suspicion of haze hanging over the low ground. "Guess it will burn off," said the doctor, which was assented to with a chuckle by the pedagogue, and so about seven o'clock the start was made.

The forward part of the barge contained a miscellaneous assortment of camera boxes, tripods, and lunch baskets, the latter an important adjunct as at dinner time we did not expect to be near a hotel. Our horses were fresh and we rolled pleasantly along in the crisp October air over a smooth country road, pointing out choice "bits" of scenery, telling stories, comparing notes on developing, and a thousand-and-one subjects dear to the heart of the amateur.

A ride of about an hour brings us to the "Wayside Inn," a place made famous the world over by the poet Longfellow in his poem "Tales of a Wayside Inn." Here a stop was made, cameras set up, and each one secured one or more pictures of the ancient structure.

"THE WAYSIDE INN."

Perhaps it might not be out of place to quote from a recent article on the old tavern, as some of our readers may like to hear of its former history. To establish its true character, one must bring back several features that are now only a memory.

> "At one corner must be imagined a big tree, the father of its kind for many miles. From this tree an old sign hung, creaking in the restless wind. The sign supports the figure of a red horse and also the characters
>
> D. H., 1686.
> E. H., 1746.
> A. H., 1769.
>
> "The initials on the sign are those of the successive landlords of the Howe family David, Ezekiel, and Adam. Good old Puritan names, such as one would expect in those days, but the tree has been leveled, the sign creaks no more, and the brush of the modern house painter has been called upon to improve (?) the appearance of the old house which no longer shows the weather beaten clapboards of ye olden time."

After the house had been photographed to the satisfaction of all, the party gathered at the foot of the old oak near by (which is said by scientists to be over three hundred years old) and excellent groups of the club were secured. The trunk of this old tree is hollow, and in its generous cavity eight persons can stand comfortably.

Soon the order is given to "limber up," and all is made ready for another start. Pratt's Mills, which the attorney assured us "was a romantic spot, and not far out of our way," was to be our next stopping place. After a ride of about two miles, through sand and pine woods, which "the smoker" said "were better subjects for poetry than the camera," the mills were reached. To the intense disgust of all, the water, evidently not feeling well that day, refused to flow over the rude dam, thus spoiling the view we had come so far to secure. Some conversation on the subject of "dams" in general, and the attorney in particular then followed, another group was secured, and we again loaded up and started for the Sudbury river and marshes. During the ride "the pedagogue" was heard to remark that "he thought it about time to eat," which pastime was indulged in by those who felt so inclined.

A view of the long causeway, with its vista of ancient willows, an old boat moored in a picturesque bend of the stream, and several other choice "bits" were secured before reaching the old stone bridge, which place had been selected as our dining place or "tramp hotel," as "the dentist" expressed it. But who ever saw a genuine "camera crank" who would stop to eat when the loveliest of river views and a superb reflection of the bridge stared him in the face? "Business before pleasure" seemed to be the motto of all, and in a short time we had made the exposure, and were gathered on the river's bank in picnic style, and, for a few minutes all conversation was in a measure suspended. After lunch those of the party who admired groups, found ample opportunity for the exercise of their pet hobby.

ANCIENT OAKS, "WAYSIDE INN."

Again is heard the cry "to horse," and our "*impedimenta*" is hastily bundled up, and a scramble is made for the barge again, "the professor," "the pedagogue, and "the visitor" being assigned the post of honor at the front, while "smokers to the rear" is the order.

As we ride pleasantly along, some one *must* occasionally spy an attractive view, and our driver would pull up and allow us to alight, when those who felt so inclined would "spoil a plate" with as much zest as a hunter bags his first bird.

The town of Wayland is soon reached and the ancient "Pequod House, a famous colonial hotel or "tavern" was then taken by some of the party, others preferring the old pump, beneath the ancient elm in the stable yard, as a more attractive subject.

Again on the road, our horses seemingly as fresh as when we first started out, thanks to the frequent rests, through the towns of Wayland and Sudbury, across the meadows, which, in their russet garb, remind one of an etching, noting the light and shade, the clear cut silhouette of pines against the western sky, and the far-away blue of the distant mountains—things one sometimes fails to notice until the camera, with its subtle influence, schools him for all that is fair and beautiful in nature's great picture book.

At length from the summit of a hill we catch sight again of the chimneys of the "Wayside Inn," and all alight for a farewell "shot" and finish up our few remaining plates, regretting that we have not more at hand.

The sun by this time being slightly hidden, and the day well advanced, we start for home feeling fully satisfied with our day's outing, and the character of the views secured.

The result of the trip was as fine a lot of negatives as has been made on any previous field day, and the verdict of all was, "The best time of the season."

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The Daguerre Memorial.

By F. C. Beach.

THE unveiling of the Daguerre memorial on the last day of the convention was the principal and most interesting event in its history. Some delay in getting the bronze figure of "Fame" in position was experienced; the noise due to the hammering of the artizans in preparing the figure for attachment to the granite base somewhat interfered with the proceedings of the convention. But an hour before the time it was in readiness for the prearranged exercises.

The memorial is very nicely located in a prominent niche in the main rotunda of the National Museum, is well lighted, and will be seen to good advantage by the many thousand visitors to that interesting institution. As finished it is much more artistic and graceful than the published design, and is an honor to the sculptor, Mr. J. Scott Hartley. Being the only permanent memorial to Daguerre in this country, it will be looked upon by all lovers of photography with pride, and will show to the fraternity in his own country how his discovery is honored and revered here.

It behooves all amateurs and others interested in any way in photography to contribute a goodly sum towards the memorial fund. Subscriptions should be sent to H. McMichael, Main Street, Buffalo, N. Y., or will be received at our office.

Standing near the memorial was a glass exhibit case containing an original daguerreotype of Daguerre, with models of the first cameras and apparatus for making daguerreotypes ever used in this country, which was in appropriate keeping with the occasion.

Arranged at the end of the main aisle, where it joins the rotunda circle, adjoining the memorial, was a platform. It was occupied by the memorial committee, the officers of the Association, the officials of the museum, the sculptor, Mr. J. S. Hartley, and Mr. J. W. Noble, Secretary of the Interior. Seated just in front at the base we noticed Mr. G. Cramer, Mr. T. C. Roche, Dr. A. H. Elliott, and others deeply interested. It was a notable band of photographers assembled to do honor to the memory of Daguerre. In the center of the rotunda floor is a fountain. The assembled audience, seated and standing, were on the side of the fountain opposite to the platform, and looking across the fountain had an excellent view of the memorial. The space around was so vast that it was difficult to hear all that was said except to those close at hand.

The chairman of the memorial committee, Mr. H. McMichael, opened the unveiling ceremonies, about 2.40 P.M, by reading an address:

Mr. President, Ladies and Gentlemen:

Although it may seem extravagant appreciation of the man to whose memory we here to-day offer lasting and substantial tribute, I trust I do not misrepresent the voice of this Association when I say it is one of the most significant events that has ever happened in this American Capital. An organization conceived and consolidated as this one was—the Photographers' Association of America—to carry to the highest perfection this signal discovery of the great Frenchman who surrendered its possibilities to all mankind without the inventor's usual reward, could not do a more honorable or grateful act than to erect a fitting monument to Daguerre in this Western world. Morever, as Americans, we must say that we are the first nation, aside from France, to remember in monumental art what Daguerre has done for mankind, and in no more fitting position could our memorial be placed than in the National Museum of the Union.

Inspired by the thought that this body, as only an inconsiderable fraction of the hundreds of thousands now engaged in various phases of the photographic art all over the globe, might erect, in suitable form, an enduring monument to the founder of our craft and our profession, this Association at its last annual convention ordered such a work to be executed. The committee charged with the carrying out of this task, after consulting various proposed forms of expression, decided to accept the ideas of the celebrated sculptor, Mr. J. Scott Hartley of New York, whose design as afterwards approved was at once unique in conception, comprehensive in its thorough application to the subject, and entirely out of the commonplace or conventional. It was considered that the tribute, while losing nothing in dignity or elevation of sentiment, must present a simplicity in keeping with the camera, which, while one of the three greatest inventions of modern times, has likewise become the most universal over the earth, by the very reason of its primitive character and processes of manipulation. Do we not see travelers coming home, day by day, from the remotest lands of barbarism—Stanley from the Dark Continent, Kennan from the dungeons of Siberia, Prejeralsky from Central Asia, and Nordenskiold from the Arctic seas, with those mysterious regions laid before us in startling quality and realism—all because of the instantaneous victory of the camera, a triumph over complicated action as well as the reposeful spirit of the landscape. Nor should we forget right here in this acreage that surrounds us, where scientific expeditions have for generations been equipped, to survey the unknown wilderness of this continent, that the camera has been the head-light of science. That it has explored the secrets of the moon, the constellations, the planetary systems, and has been likewise a potent weapon of the Army and Navy of the United States. To pursue an inquiry of its manifold usefulness, as in the workshop and factory, in the arts of painting and sculpture, as well, is useless in such an assemblage as this. To the newspaper and the courts and the surgeon it has been a powerful and useful weapon. Again we ask how many of the hundreds of thousands of inventions recorded in yonder Patent Office, many of them now dominant in every country of the earth, would have been possible, had it not been for this discovery of Daguerre, a half a century ago. But perhaps one of the greatest features of this discovery is the light and happiness it has carried to the millions of people dwelling between the poles. Portraiture in oil, black and white and pastel was an expensive and luxurious enjoyment fifty years ago, but when the discovery of Daguerre broke out like a universal epidemic over the world, the humblest could preserve the forms, faces, and characteristics of loved ones gone before. If human kind be here considered, may I not ask is this not better than steam by land or sea, electricity or dynamite projectiles.

I know, therefore, that we can all appreciate the story told by this memorial now submitted to the American people. The bronze figure, "Fame," in reverential pose, places the laurel wreath about the head of Daguerre, and it extends around the earth, thus typifying the universal blessings conferred by the great Frenchman; and the pedestal is a granite Atlas, and on which we may believe this artistic and eloquent composition will rest for ages yet to come.

And this committee has endeavored to discharge its duties to this Association, to this assemblage, and to the Government of the United States, to which it commits the keeping of this Memorial to Daguerre, now to be unveiled.

Mr. McMichael then introduced Secretary Noble (a fine, intelligent looking man), who read his address accepting the memorial on behalf of the government, as follows. He said:

Fame enwreaths the globe with the glory of Daguerre. His name might be properly inscribed upon the figure of the sun. With its divine light his name will evermore be associated, with its brightness his genius will be illumined for all time. The earth and the firmament show forth the handiwork of the great Creator, but their most hidden forms have been and are yet to be developed by that art, the secret of which God gave Daguerre.

The claims of the other great searchers after truth in this art, their labors and their attainments, are not to be disputed. There are Scheele, Wedgewood, Sebeck, Talbott, and Daguerre's associate co-inventor and compeer, Niepce. But it was for the scenic artist of the Parisian opera, first securing through the lens the image on the plate, to have fixed it there and produced the daguerreotype. Daguerre did not claim the invention as solely his. At the very culmination of his fame he shared the pension of France in due proportion with the son of Niepce. For the discovery of photography Daguerre was awarded a pension of six thousand francs, and Niepce four thousand. Yet the complete and practical invention was the result of long months of toil in the laboratory by Daguerre after his copartnership had begun, until his all-absorbing devotion to his art and his emphatic expression of his hope "to fix the shadow on the wall" had led even his relatives to fear he was indeed at last insane. But while his physician was thinking of a certificate that might confine this devotee to a mad-house, he came forth with the amazing truth of his success.

Daguerre not only found the secret of picturing material forms upon the plate, and of fixing them there, but he gave the knowledge and process of the art to mankind. Upon the declaration from the academy of his discovery, the soul of the people responded as it ever does to the benefactor of our common race. Here was no alchemist seeking to create gold, and hiding each supposed newly discovered fact in chemistry in his avaricious mind, but an unassuming laborer among his fellows, holding high his sunlit torch of truth; he reached that elevation where knowledge produces wealth indeed, but where sympathy for man secures renown.

[At this point the speaker stepped down from the platform and, drawing a cord, pulled apart the United States and French flags, unveiling the memorial amid the plaudits of the assembly. Then returning he continued his address.]

It is most appropriate to have placed at the capital of our republic to-day a monument of one who commenced his career as an artist, in very truth, at the foot of the ladder; who obtained means for testing his already conceived invention by exhibiting the first fruits of his search—the diorama—and amid the most marked characteristics of his genius was an unfailing reliance on his own industry. In our country the lesson cannot be too frequently taught, that for intelligence and industry the way to success and distinction is ever open. The Republic knows no class, and even as the sunlight enveloping the globe vivifies and beautifies all that seeks its light, so does liberty embrace, sustain, and reward the souls of all that aspire and work. The American Association of Photographers may proudly place at our National Capital the statue of this founder of the art it cherishes, whose life and success illustrated anew the dignity of labor.

It may be said, by some, that if Daguerre had never lived, photography would yet have existed; that in the fervent heat of intellectual effort of the nineteenth century, many minds were intent upon the discovery of this single art, and had he not succeeded, others would.

There is a pathetic story told by Gaston Tissandier. I tell the story in substance, as it is told by him, of a youth poorly dressed, timid, miserable and famished-looking, who entered the shop of Chevalier, an optician, the most celebrated in Paris. This youth approached Chevalier, and, observing the work going on, the boy said: "You are making a camera in which the ordinary lens is replaced by a convergent glass. What is the price?" Upon being told this he seemed sadly discouraged, but the conversation continuing, he said: "I have succeeded in fixing the image of the camera upon paper." He produced a box, evidently of his own workmanship, furnished with an object glass, and said: "By this I can obtain views from my window. I wish to procure your improved camera in order to continue my efforts with a more powerful and certain apparatus." Chevalier silently contemplated him as another enthusiast seeking the shadow already deluding, as he believed Niepce and Daguerre. Finally the boy drew from his pocket-book, devoid of aught else, not a drawing or a painting, but an image of the roof, the chimneys far-stretching away, and the dome of the Pantheon from his garret window; he had fixed a view of Paris and had it there to show. But this youth was allowed to go on his way with his picture and his poverty, and was heard of no more. So ends the story. He sank in the great ocean of humanity where many another genius has gone down unrevealed, unrecognized, and fameless. "Gems of purest ray, serene," that "the deep, unfathomed depth" of this ocean bear.

Many sailed, but Columbus discovered. The continent is his who first erects his standard and invites all people to its shore. Such was Daguerre. It may be another discovered, but Daguerre both discovered and made known. But why speak only of the earliest discovery? Let us look for a moment upon the wonders of the art thus developed. Photography, in Daguerre's time, took from three to seven hours to develop the picture after it had been taken. To-day it is the operation of a moment. Then the subject of the photograph had to be held in view for such a time that the process became torture, and caused many a negative to be too much exposed or badly developed, a result seen sometimes now outside the product of the camera.

To-day, the movements of the fleetest horse are caught as if he were suspended in the air. Wheels of the swiftest locomotive are so instantly impressed that the spokes in the driving-wheels of a forty-mile train appear the same as if at rest. The bird in its flight is pictured with the shot that are rushing to overtake it. The lightning's flash is caught, and the dropping rain presented with it and by its light. The telescope has indeed revealed many secrets of the sky, but with the mightiest telescope that man has ever made, there is not presented to the human eye worlds that through it are depicted upon the plate of the photograph, and thus, and thus only, transmitted to human intelligence.

May it not be, is it not already true, that the photograph is heralding the approach to human intelligence of the light of long-existing suns? The entire newspapers, issued each day in a beleaguered city, have been condensed and transmitted beyond its walls by a swift pigeon, and then enlarged and read by all the world. It is asserted that a new color has been added to the rainbow, and it is anticipated that extinguished stars, now rolling in almost complete darkness, may yet be photographed. All the beautiful productions of art-science the world possesses are brought to the household, until the child in the nursery prattles of the Venus of Milo, and the young machinist may study the most immense and wonderful engineering in his home. Photography has placed a magic mirror in every one's hand in which he may possess and enjoy the wealth, the only real wealth, of all humanity, the best products of the best minds. It is not necessary to endeavor to enumerate to you all the wonders of photography, but there is one process which should not be unmentioned here—the composite photograph, where many of a class, it may be of school-girls at Vassar, or boys at Yale, are photograghed one after another upon the same plate, until there is at last presented resultant of them all. A common type comes forth bearing their combined characteristics, the average of their human forms and faces—majesty and strength in man, beauty and versatility in woman. The most remarkable of these narrated is the composite of the pictures of Washington. Many artists in their day and opportunity made pictures, each, of the beloved father of our country. If a composite is taken of those that were in profile, one result appeared, but unsatisfactory. With those of full face there is another result, still unsatisfactory. But taking the combination of pictures, busts or medallions of all the Washingtons that all the artists have made, a face and a form is displayed whose lineaments are such that they may be accepted as truly those of Washington.

May this not suggest to devout minds even a higher conception, that, were all the features of all the human faces that God has portrayed and successfully combined upon the photograph, we might have therefrom produced the true features of the Savior, the perfect flower of all humanity.

No art has engaged from the first the attention of greatest inventors besides those pursuing it directly. Watt, the inventor of the steam engine; Davy, who found a means to deprive the damps of the mine of its explosive dangers; Herschel, who by his inventions discovered new worlds in the skies, were all co-laborers in the art of Daguerre.

Gentlemen, your art has become the art preservative, the art commemorative of all the arts. Even as the eye receives the forms of matter upon the retina and prints them upon the memory, the photographic album of the soul, so does your art secure and preserve all forms of nature—the products of the sculptor, the painter, and even of the printer, by photography.

The art of photography is in its infancy. Its greatest wonders have not yet been attained. The servitors at this altar, unlike the followers of Zoroaster, are not worshipers of light alone, but of all that light may reveal in nature and in science.

The Association may be congratulated upon the selection it made of Mr. Hartley as its artist to formulate artistically a monument for the great French inventor of its art. An already well-established reputation of the sculptor has been much enhanced by this beautifully symbolic representation.

Americans have not been unfaithful stewards of the talent intrusted them by France. The improvement to its present wonderful stage of advancement, and the enhancement of the commercial value of photography, has been in great part the result of the activity of our native inventors. They have improved the camera, the shutters, and especially the sensitive films or surfaces.

As the Secretary of that Department of which the Patent Office is the most valuable and advancing portion, I thought it but my duty, however feebly, to meet you and to aid you; you are bees of this hive, and your king will be he who does most for the art of Daguerre. But, gentlemen, your art that in some sense may be deemed to have rivaled nature's own lenses, cameras, and tablets, cannot hope to reach, as some have vainly thought, to the spiritual world, the realm of spirit. You may depict the homestead, but you cannot print the happy memories of childhood, the affection of parents, the hopes of youth, the aspirations of manhood, the belief in God, and the fraternity of man. These are printed on the mind by the Great Photographer of the soul, that, when the "stars shall fade away, the sun himself grow dim with age, and nature sink in years, shall flourish in immortal youth, unhurt amidst the war of elements, the wreck of matter and crash of worlds."

May we all take care not only of success on earth, but that the form we are imprinting on the great hereafter will unite these with the great souls who have deserved their highest reward by living for the good of man.

Ex-Governor Fletcher, of Missouri, was invited to the platform, and addressed the audience in a short but brilliant manner, concluding with words of congratulation and compliment to the men who composed the Photographers' Association. Then the ceremonies ended. Mr. Hartley, the sculptor, was congratulated on the success of his work.

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Photographic Illustrations of Poems.

IT HAS been the custom for the past four or five years for the Photographers' Association of America to offer a special prize at its annual conventions, for the best photographic representation of some designated poem. At the Washington Convention Tennyson's poem of "Enoch Arden" was selected, and the prize was competed for by six exhibitors. It will be our purpose to review the exhibits and give those lines of the poem which were chosen by the different exhibitors. Each exhibitor was required to send three pictures not less than 11 x 14 in size. They were hung in an alcove quite a distance from the side window and were poorly lighted. Only the set at the extreme end of the alcove directly facing the window was properly lighted.

The poorest exhibit was by Mr. Eaton, photographer of Potsdam, N. Y. His first picture represented Annie, Enoch, and Philip as at play under a cliff. The rocks were very artificial, and the supposed ocean dashing on the shore was shown as a quiet mill pond. There was little or no naturalness in the scene. It was intended to illustrate the following four verses:

Long lines of cliff breaking have left a chasm;
And in the chasm are foam and yellow sands;
Beyond, red roofs about a narrow wharf
In cluster; then a mouldered church; and higher
A long street climbs to one tall-tower'd mill;
And high in heaven behind it a gray down
With Danish barrows; and a hazel-wood,
By autumn nutters haunted, flourishes
Green in a cup-like hollow of the down.

Here on this beach a hundred years ago
Three children of three houses, Annie Lee,
The prettiest little damsel in the port,
And Philip Ray, the miller's only son,
And Enoch Arden, a rough sailor's lad
Made orphan by a winter shipwreck, play'd
Among the waste and lumber of the shore,
Hard coils of cordage, and swarthy fishing-nets,
Anchors of rusty fluke, and boats updrawn;
And built their castles of dissolving sand
To watch them overflow'd, or following up
And flying the white breaker, daily left
The little footprint daily washed away.

A narrow cave in beneath the cliff;
In this the children played at keeping house.
Enoch was host one day, Philip the next,
While Annie still was mistress; but at times
Enoch would hold possession for a week:
"This is my house and this my little wife."
"Mine too," said Philip, "turn and turn about":
When, if they quarrel'd, Enoch, stronger made,
Was master; then would Philip, his blue eyes
All flooded with the helpless wrath of tears,
Shriek out, "I hate you, Enoch!" and at this
The little wife would weep for company,
And pray them not to quarrel for her sake,
And say she would be a little wife to both.

But when the dawn of rosy childhood past,
And the new warmth of life's ascending sun
Was felt by either, either fixed his heart
On the one girl: and Enoch spoke his love,
But Philip loved in silence; and the girl
Seem'd kinder unto Philip than to him;
But she loved Enoch, though she knew it not,
And would, if asked, deny it. Enoch set
A purpose evermore before his eyes,
To hoard all savings to the uttermost,
To purchase his own boat, and make a home
For Annie: and so he prosper'd that at last
A luckier or a bolder fisherman,
A carefuler in peril, did not breathe
For leagues along that breaker-beaten coast
Than Enoch. Likewise had he served a year
On board a merchantman, and made himself
Full sailor; and he thrice had pluck'd a life
From the dread sweep of the down-streaming seas;
And all men looked upon him favorably:
And ere he touch'd his one-and-twentieth May,
He purchased his own boat, and made a home
For Annie, neat and nest-like, half-way up
The narrow street that clamber'd toward the mill.

His second picture was an interior showing a cradle in the center of the room with two other children well grown, and was designed to depict the scene prior to his sea voyage. It was fairly lighted, but we noticed Enoch and Annie were altogether too young-looking to have such large children. The verses it was intended to illustrate run thus:

And Enoch faced this morning of farewell
Brightly and boldly. All his Annie's fears,
Save as his Annie's, were a laughter to him.
Yet Enoch as a brave, God-fearing man,
Bow'd himself down, and in that mystery
Where God-in-man is one with man-in-God,
Prayed for a blessing on his wife and babes
Whatever came to him; and then he said,
"Annie, this voyage by the grace of God
Will bring fair weather yet to all of us.
Keep a clean hearth and a clear fire for me,
For I'll be back, my girl, before you know it."
Then lightly rocking baby's cradle, "And he,
This pretty, puny, weakly little one,—
Nay—for I love him all the better for it—
God bless him, he shall sit upon my knees,
And I will tell him tales of foreign parts,
And make him merry when I come home again.
Come, Annie, come, cheer up before I go."

Him running on thus hopefully she heard,
And almost hoped herself; but when he turn'd
The current of his talk to graver things,
In sailor fashion roughly sermonizing
On providence and trust in Heaven, she heard,
Heard and not him heard; as the village girl,
Who sets her pitcher underneath the spring,
Musing on him that used to fill it for her,
Hears and not hears, and lets it overflow.

At length she spoke, "O Enoch, you are wise;
And yet for all your wisdom well know I
That I shall look upon your face no more."

"Well, then," said Enoch, "I shall look on yours.
Annie, the ship I sail in passes here
(He named the day); get you a seaman's glass,
Spy out my face, and laugh at all your fears."

The third picture illustrated his return after so many years of absence, when it was supposed that he was lost at sea, and shows him standing in the dim twilight looking in the window of Annie's cottage. There he sees Annie and her new husband, Philip, standing in the room talking to each other. In the first place his own character does not harmonize at all with the verse, since on his return from the shipwrecked island he is described as having white hair. He is represented with dark hair and a dark beard. The position of Annie and Philip inside is stiff and they are very much out of focus. The arrangement of the figures and general conception of what the poet tries to convey, was very poorly carried out. The same idea was much better portrayed in two other different exhibits. The picture illustrates the following four verses:

But Enoch shunned the middle walk, and stole
Up by the wall, behind the yew; and thence
That which he better might have shunned, if griefs
Like his have worse or better, Enoch saw.

For cups and silver on the burnish'd board
Sparkled and shone; so genial was the hearth;
And on the right hand of the hearth he saw
Philip, the slighted suitor of old times,
Stout, rosy, with his babe across his knees;
And o'er her second father stoopt a girl,
A later but a loftier Annie Lee,
Fair-haired and tall, and from her lifted hand
Dangled a length of ribbon and a ring
To tempt the babe, who rear'd his creasy arms,
Caught at and ever miss'd it, and they laugh'd;
And on the left hand of the hearth he saw
The mother often glancing toward her babe,
But turning now and then to speak with him,
Her son, who stood beside her tall and strong,
And saying that which pleased him, for he smiled.

Now when the dead man come to life beheld
His wife his wife no more, and saw the babe,
Hers, yet not his, upon the father's knee,
And all the warmth, the peace, the happiness,
And his own children tall and beautiful,
And him, that other, reigning in his place,
Lord of his rights and of his children's love,—
Then he, tho' Miriam Lane had told him all,
Because things seen are mightier than things heard,
Stagger'd and shook, holding the branch, and fear'd
To send abroad a shrill and terrible cry,
Which in one moment, like a blast of doom,
Would shatter all the happiness of the hearth.

He therefore turning softly like a thief,
Lest the harsh shingle should grate under foot,
And feeling all along the garden-wall
Lest he should swoon and tumble and be found,
Crept close to the gate, and open'd it and closed,
As lightly as a sick man's chamber-door,
Behind him, and came out upon the waste.

Adjoining Mr. Eaton's exhibit was that of Miss Catherine Weed Barnes, which, of all the exhibits, appeared to us to tell a more consecutive and consistent story. Her first showed the interior of Enoch's cottage, as is illustrated in our present number, and is designed to depict their early happy married life. The pose of Annie is very easy and natural, while that of Enoch is somewhat novel. It looks as if they were making love to each other. The different details are nicely arranged and the lighting is soft and even. The verse it illustrates reads thus:

"So these were wed and merrily rang the bells,
And merrily passed the years, seven happy years
Of mutual love and honorable toil."

The second picture is something like Mr. Eaton's last. It is supposed to be at the beginning of the evening, and the view is looking from outside through a double open French window. In the room is seated Annie with her two half-grown children standing behind her, while Philip, holding the new babe, is seated opposite. Outside, kneeling near the window in a forsaken attitude, is Enoch with uplifted clenched hands. Very pretty ivy is seen growing up along the side of the house around the window. It was a difficult undertaking to get the dark exterior to harmonize with the bright interior, but Miss Barnes succeeded admirably. It was the prettiest picture in her set and will be reproduced in our next number. Enoch is represented as saying:

> "Uphold me, Father, in my loneliness
> A little longer! Aid me, give me strength
> Not to tell her, never to let her know."

In the third picture Enoch has returned from Annie's house to that of Miriam Lane, and is seen in the interior propped with pillows up in a large chair as if he was sick. The nurse is seated near him. Pointing his finger toward her he is supposed to say:

> "I charge you now,
> When you shall see her, tell her that I died
> Blessing her, praying for her, loving her."

There is an originality of pose in this picture which is striking. It is well lighted and all the accessories are consistent with the supposed circumstances. Enoch looks sick and old, and his determined effort to emphasize his charge by uplifting his hand and pointing his finger is very logical.

Had Miss Barnes been known as a professional photographer, it is probable the prize would have been awarded to her. As it was, her work was considered next best to the exhibitor to whom the prize was awarded.

The party appointed to judge these pictures was sick, so the task devolved upon a Mr. Hurd, of Ohio. The points to be considered in judging were originality, composition, lighting, and technique.

(*To be Continued.*)

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WOMAN'S WORK.

EDITED BY MISS CATHERINE WEED BARNES.

Foreign Tours.

HOW useful the camera may be made in the hands of women interested in special subjects, is very clearly stated in the interesting letter found in our correspondence, by Miss Elizabeth A. Slade. Her practical experiences and description of the places she photographed will be appreciated by all likely to take a similar tour.

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An Amateur at the Washington Convention.

BY CATHERINE WEED BARNES.

IT WAS suggested to me late last spring that it would be well to enter the professional competition at Washington in August, for the "Enoch Arden" prize. Finding that amateurs who paid their dues to the National Photographic Association of America could compete with their professional brethren I entered the Association and received the circular of regulations. As expressed in my July editorial the subject of illustrating poems has a wonderful fascination for me. I began the preliminary study of the poem with an earnest zeal which led me to write the above-named article. It seems to me, now the victory has been decided, that it may be of interest to other amateurs to learn how one of their number prepared for such a contest. It was more through a hope of gaining valuable help in an advanced department of the school of experience than from any idea of eventual success in winning the prize that the work was undertaken. These were gained, as they could not fail to be, but the prize, as is known, went elsewhere.

Many hours of thoughtful study were spent in selecting the lines which, it seemed, might best express the poet's ideas to one who, perhaps, might not have read the poem or scarcely remembered it. Those lines were quoted in last month's number, and will appear with the proper pictures in this magazine, beginning with the September number. Passing over the child-life of Annie, Enoch, and Philip, which I did not think could be used when only three pictures were allowed, I decided on the early married life of Annie and Enoch for the first picture. It did not seem correct to take fragmentary scenes without proper connection, and then, to be consistent, I was obliged to include only such lines as required little, if any, outdoor scenery. Much searching of books of travel, magazines and art works aided me in designing the scenery and costumes, and then the sitters had to be carefully chosen. Believing that in what artists call a "picture" painted or simulated effects should, if possible, be avoided, I had a carpenter make me a wooden framework covered with painted boards such as would naturally form the walls of an English sailor's cottage. Everything was to be extremely plain, from the rag carpet to the old-fashioned table and dishes, while the bird-cage hung in the passage-way, and Enoch mended his nets over the half-open door, watched by Annie inside the room as she mended her husband's socks.

A sailor's costume was easily planned, but Annie's must be of some soft clinging material, inexpensive and made in the style of a century ago. Ordinary sateen and home sewing accomplished this, and all of the other accessories were meant to express the surroundings of a happy, simple married life.

The day set for the sittings proved stormy, but by 6 A.M. I was out in the studio putting the last touches to the scenery and thinking of different poses. After breakfast posing began and before noon eighteen exposures had been made without any help to fill plates, adjust the heavy camera-stand and generally make life easier. After development with pyro and soda, which in this, as in the subsequent work, was slowly and carefully done, the negatives were all laid aside for future selection. None of them were in any way retouched and the average exposure was ten seconds.

The second picture was the hardest of all to conceive and execute. The scene selected was where Enoch, returned, sees, through the window of Philip's home, his beloved Annie watching her babe on its father's knee, while his own children stand looking on, a happy family circle. The light from the room into which he gazes, shines on Enoch's weary, sad face, and that which would have fallen on the ivy-covered wall and crouching figure was curtained off, confining all but a few rays of light to the interior of the room shown through the half-open window, it being night when Enoch sought Philip's home. After careful consultation with Mr. L. W. Seavey, he made me the wall and window, but the ivy and branches that nearly covered it were natural growths and the turf and gravel in the foreground came from the garden about my studio, the former being laid on zinc to protect the floor from dampness. Great care was needed to properly place the little furniture the room could hold and in arranging the group of several grown people and a five-month's old baby. It was not easy to procure proper subjects, devise costumes, or manage to focus on sitters placed in anything but a straight line and have every one and everything in proportion. It was another struggle to have the inside group just enough visible to appear natural, but Enoch, as the important fact of the picture, required the greatest care in treatment. Of the two dozen exposures made that hot day all but one were rejected for some slight defect. It was necessary several times, in making this and the other pictures, to pose myself in the required attitude before the sitter caught the idea I wished to convey. The studio is nearly twenty-three feet long, but so much was taken up by the scenery that I had to build out a platform from the front door, and a frame-work covered with non-actinic cloth, so as to run my camera-stand several feet outside the building. In this and the last picture I had some one to change plates and help with the heavy work, but not with the arranging or posing.

The last picture was the first taken, and the wall of Enoch's room was made of rough boards stained and defaced by age and hard usage, while the doorway partly revealed an old staircase. Everything was intended to sharply contrast with the comfort and abundance of Philip's home. Overhead, shutting out the top-light of the studio, was a timbered ceiling made under my directions by a carpenter so as to have the room appear, as it naturally would, dim and shabby with all the light coming from the side. This scene, also, required several exposures.

Then came the work of final selection of the negatives for the three best ones. I took the latter to the gallery of a professional friend, my own not having conveniences for such large work, the negatives being 11x14. There I spent a day in printing and toning the selected pictures. He then mounted, framed and sent them to Washington, whither I followed them some days later.

It is needless to say that the benefit of comparing one's efforts with the work of those who are supposed to be thoroughly proficient is worth much to those who sincerely desire to improve their work, and I, personally, feel confirmed and strengthened, if that were needed, in my love and interest in camera work by my Washington experiences. They also taught me, and I wish to impress this strongly on all camerists, that while with expensive accessories and a large studio one can most easily do fine work, it is possible in a smaller room, with considerable exercise, it may be, of brain and body, to bring about results of which one need not necessarily feel ashamed. Of course a good lens and plates are absolutely necessary. Mine was a Voigtländer W. A. Euryscope, and I used for two of my negatives Newcomb and Owen's plates, and for the other Allen and Rowell's. Both were sent me especially for this purpose and were equally good. A quick inventive brain can supply more of the other requisites than would be believed possible by those who think that such things can always be purchased. But it means hard labor every time and a willingness to put one's own hands to every detail of the work. With every obstacle or troublesome difficulty I was continually told it was *impossible* to do thus or so, to which my reply was, "I don't like that word, very few things are really impossible." "Well, I don't see how you are going to manage," would be the comment on this, to which I would say: "Neither do I, at this moment, but I mean to *find* a way." The portrait studio is an excellent place for patience to have her perfect work, and the Christian graces find plenty of unconscious teachers through which to impress themselves on many a pupil. But it is a curious fact that the more one does the more one can do, as long as strength lasts, and if women could always systematize their work as men can the results would startle them. The manifold cares of a household with its incidental "werryments" make regular work of any kind difficult, if not impossible for many of them, but determination works wonders, and I wish to urge on all, women and men who find in camera work a vital source of interest and benefit, do not play with the work, but make it a real, genuine part of yourself and you will be doubly, trebly rewarded. In its far-reaching, ever-extending field of exploration you will gain a broader, wider, deeper culture than you dreamed might be possible, and deeply as I revere and honor the work of brush and palette I shall never regret my transferred allegiance to the camera.

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THE
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EDITORIAL COMMENT.

Amateur Editors.—The genial Abraham Bogardus seems to lose something of his geniality when he writes concerning current photographic literature. His chief reason for complaint seems to be that most of the photographic writings of the day are from the pens of amateurs for whom Mr. Bogardus has no words of praise. In a recent communication to the *St. Louis and Canadian Photographer* he is particularly severe on a certain class of editors which he stigmatizes as "amateur editors." Of the amateur editor he writes, "it is pretty difficult to tell what he is good for, his principal efforts seem to be directed in ridiculing the men who have worked up photography to its present perfection," and he more than insinuates that the amateur editor indulges largely in "gas and nonsense." Without seeking to open up a controversy with Mr. Bogardus, whose long service in the art is well known to us, we are not willing that his sweeping statements should go uncontradicted. We are not quite certain whether Mr. Bogardus uses the word amateur as applying to novices in editorial work or whether he means simply an amateur in photography, but we take it for granted that the latter is meant.

The majority of American photographic journals and many of the foreign ones are edited by amateurs in photography, and a familiar acquaintance with the articles which they publish fails to substantiate Mr. Bogardus' statement that they seek to ridicule those who have worked up photography to its present perfection. True, the amateur editor may not have stood for forty years behind the camera, he may have neither the appliances nor the practical ability for making first-class portraits, but does any one suppose that portrait making is all there is to modern photography? What of photomicrography, astronomical photography, and a host of other scientific applications of the art, in which the amateurs are the most zealous workers? Does Mr. Bogardus suppose that these applications of photography are worthless, or that the record of them has no value, even though the professional may be little benefited thereby ?

We have not been lead to make these remarks on Mr. Bogardus' grossly unfair statements by the supposition that he had us in mind when he made them. Probably he has never seen a copy of the AMERICAN AMATEUR PHOTOGRAPHER; very likely he does not know of its existence, and the fact that we make no pretense of catering to the wants of the professional, removes us from the range of Mr. Bogardus' strictures. But we are "amateur editors," and we are not willing to give the consent of silence to the statements contained in the article referred to. We believe the standard of those photographic magazines which are presided over by "amateur editors" to be fully equal to that of those otherwise conducted, and having always had the courage of our convictions, we do not fear to make them known.

Eikonogen Developer for Bromide Paper.—In a recent number of the *Photographic News*, Colonel Waterhouse writes favorably of Krugener's formula, which is made as follows:

Distilled water, ...	10 ounces.
Sulphite of soda, ...	160 grains.
Carbonate of potash, ...	120 grains.

When dissolved add

Eikonogen, ...	40 grains.

Preserving Solutions.—The stability of easily decomposed solutions is greatly increased if the bottles in which they are kept are always full. In the case of stock solutions of pyro, eikonogen, etc., which are in constant use, this end is attained by adding a sufficient quantity of clean pebbles or broken glass to maintain the liquid at the same level. The suggestion is due to Colonel Waterhouse.

Eikonogen for Instantaneous Work.—The same writer states that the chief value of eikonogen for instantaneous work lies in the fact that it allows the use of a smaller diaphragm. He further writes that there does not seem to be the same tendency to excessive density and hardness with eikonogen as with pyro or hydroquinone in cases of under-exposure, while there is a greater tendency to weakness and want of density by over-exposure, or by too quick development. Colonel Waterhouse considers eikonogen inferior to pyro for vigor and delicacy of gradation, but states that the result depends very much on the strength of the solutions, and the relative proportions of eikonogen and alkali.

Collodion Plates of High Sensitiveness.—Herr Gunther writes to the *Photo News* that Herr Gaedicke, after seven years of experimental work has succeeded in discovering a method of preparing dry collodion plates of good keeping qualities and about as sensitive as a medium grade gelatine plate. The new plate is said to combine the excellences of the wet collodion and the gelatine plates. It is color-sensitive, possesses great latitude of exposure, develops easily and quickly with great delicacy of gradation, and is a quick printer. If all these claims are substantiated by use, the new plate has a great future before it.

A Novel Carbon Process.—Mr. O. Volkmer in *Eder's Jahrbuch* publishes the details of a dust carbon process, not over-difficult of manipulation and requiring no reversed negatives. Sheets of strong paper are drawn through a one to fifty gelatine solution and hung up to dry. The sheets are then wet and squeegeed on pieces of glass, and brushed over with a solution of ten parts gelatine, ten parts gum arabic, twenty parts white sugar, and eighty parts distilled water. While still moist and on its glass support, each sheet is placed in a dusting box such as is used in the photogravure process containing a mixture of one hundred parts of white sugar and five parts of French lamp-black. After eight or ten minutes the paper is withdrawn and it will be found to be covered with fine particles of the dust. This paper will keep indefinitely, and is sensitized by floating on a bath containing fifty parts of bichromate of potassium, six thousand parts of water, and a trace of ammonia, until it assumes a bright yellow color. It is then immersed in a one to seventy calcholic solution of chrome alum, and dried. Expose as usual, and develop first in hot water, finishing with cold, in which the prints may remain for several hours. If the printing was carried too far the addition of a little ammonia is advisable in this case. These prints have a pleasing grain, and the process would seem to be applicable in making phototypic printing blocks.

Cristallos.—Under this name a new developer has made its appearance in France. It is stated to be a derivative of cocaine and to possess extraordinary energy, requiring a large portion of bromide to make it tractable. Owing to its strong reducing action it has an unpleasant tendency to produce "yellow fog."

Illustrating Poems by Photography.—We are pleased to note the unanimity with which photographic journals at home and abroad are reprinting Miss

Barnes' thoughtful paper or this subject which was first published in this magazine. Miss Barnes never writes except when she has something to say well worth reading.

Sic Transit.—The *Boston Photographic Review* has suspended publication owing to the editor's inability to devote his entire time to it. The *Review* gave promise of usefulness, and we regret its untimely demise.

Film Negatives.—Mr. Chapman Jones, writing on this subject in *Photography*, is of the opinion that the only preponderating advantage of film negatives over glass, viz., the very great saving in weight, is lost just where it is most needed, in the larger sizes, owing to the impossibility of keeping the celluloid sheet flat during exposure. It seems to us that this difficulty might be met by the use of a frame with movable sides, by means of which the films, suitably clamped, might be tightly stretched before being placed in the holders. The roll holder does not always hold the film smoothly against the exposing tablet, owing to the fact probably that the tension is all in the direction of the length, and sagging or cockling are of frequent occurrence. It does not seem to be a difficult matter to devise a suitable stretching frame which should hold the film tightly stretched in all directions and so insure a perfectly flat surface.

The Camera Club's New Home.—Some of our readers have doubtless enjoyed the kindly hospitalities of the London Camera Club at their quarters in Bedford Street. For some time the need of larger rooms has made itself imperatively felt, and ground was leased and plans drawn by Mr. J. Gale, a member of the Club. The building is now in process of erection, and the August number of the *Journal* of the *Camera Club* contains the floor plans, elevations and description of the new premises, which promise to be commodious and convenient.

The object in view was to combine the photographic and social features of the Club and to provide suitable facilities for both. The building stands on the south side of Charing cross-road, at the corner of Cecil Court, having a frontage of 51 feet on the former and 50 feet on the latter. It is built of red stone and brick and contains five floors.

The photographic needs of the Club seem to be amply provided for in the way of developing and enlarging rooms, a studio, laboratory, library, and workshop. The general meeting room is a handsome hall, 43 feet by 26 feet by 14½ feet, well ventilated and provided with a 9-foot screen for the optical lantern. In addition there is a kitchen, a grill-room, committee and secretary's rooms, a billiard-room, and three cloak-rooms.

The Camera Club was the first of the name and has long occupied an honorable position in the photographic world, and with the enlarged facilities which the new building will give it, its usefulness will doubtless be still further increased.

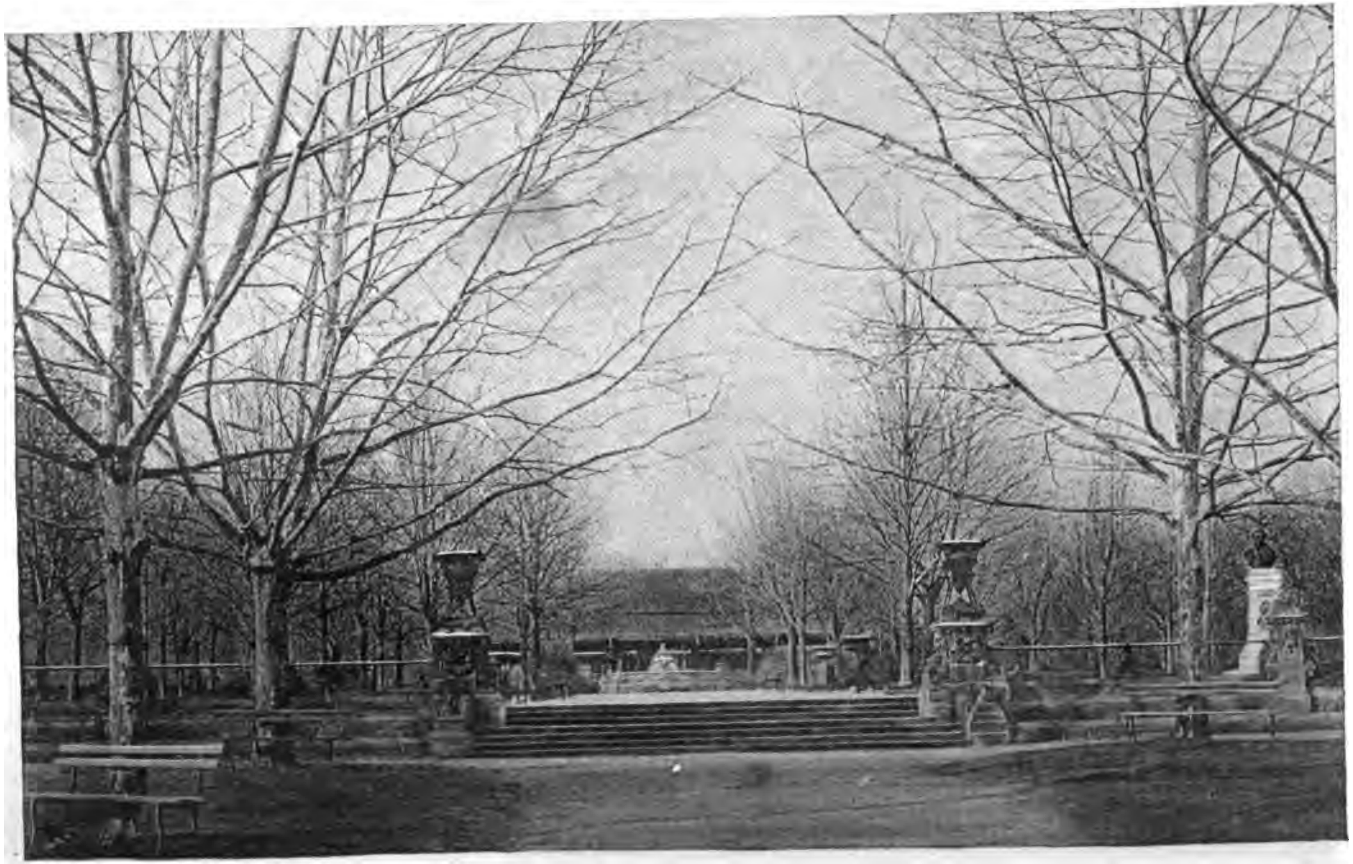
A Model Developing Room.—Mr. C. Ray Woods, in one of his always interesting "Notes from the Cape" in the *British Journal*, describes his developing room as follows: "The room is ten feet square. The window faces the door. Along each side is a bench twenty-one inches wide, at a height of three feet two inches from the ground. The sink under the window is two feet in width and six feet in length, made of wood, well lined with thick sheet lead. It is five inches deep, the edges being at the same height as the side benches. A portion of each bench as wide as the sink is raised with a slight slope and covered with sheet lead, leading into the sink, allowing plates, bottles, measures, etc., to drain. In front of the window, at a height of about twelve inches from the bottom of the sink, runs a copper pipe for the supply of water, and into this pipe are inserted four taps of three-eighths of an inch aperture. These taps are placed about a foot apart, and two of them are fitted with roses for the better washing of the plates, which rest on home-made galvanized wire stands, the tops of which are a few inches below each sprinkler. Alum and fixing solution are held in dipping baths at each side of the sink on the leaden covered part of the benches. Above the window is a narrow shelf running from wall to wall to take the bottles of developing solutions. The window is altogether forty inches wide by twenty inches high, and has its three outer panes glazed as follows: To the left, a sheet of ordinary glass; in the center, a sheet of stained orange; to the right, a sheet of ruby. Covering this window are two sashes, running horizontally in grooves; one of them is glazed with ruby, and the other, that nearest the operator, with stained orange and covered on the side furthest from the sink with white tracing cloth. The result is a very bright, but safe light, darkest at the right-hand side where development is carried on. By moving the sashes, red, yellow, or white light can be admitted at will. The walls of the room are painted light yellow. A few drawers and a small cupboard complete the fittings."

A Proposed Convention of Amateur Photographers.—The Syracuse Camera Club, at a meeting held August 8th, authorized its president to issue an address to the amateur photographic societies of America with a view to securing their co-operation in securing the holding of a convention of American amateurs at an early date. Acting under this resolution, Mr. A. P. Yates, the president, has issued a circular asking the various clubs to appoint delegates and name a date and place of meeting, with a view to preliminary organization. We hope that the circular will receive a favorable response from all our American clubs. Our readers will remember that we have more than once called attention to the benefits to be derived from such a movement, and that not long ago we reprinted the Constitution and By-Laws of the French Union of Amateurs for the special purpose of calling attention anew to the advisability of a general organization or league of American camerists. It is not our intention to magnify ourselves in this matter. We have simply done what we conceived to be our duty, and now that the Syracuse Club has taken the initiative, we are ready to do all in our power to aid the movement which we heartily commend to the favorable attention of all our readers, believing that the carrying out of the projected scheme cannot fail to confer great and lasting benefit upon amateur photography in America.

The address in question is addressed only to organized camera clubs, probably because the initiative must be made by these organizations, but we believe that it would be a very grave error to limit membership in the proposed larger and broader organization to members of clubs, since the object of the movement is stated to be "to diffuse a more widely spread scientific interest in the science of photography, and to promote social intercourse among the amateur photographers of America." We think the object is a perfectly worthy one, and if such a national organization or league was formed, well officered and managed, it could accomplish more for the science and art of photography than any smaller association. A feature which it could undertake would be the getting up and managing of a first-class exhibition of photographs annually, in some central city. We shall hope to hear from amateurs on the subject.

The Daguerre Memorial.—It seems a pity that more time had not been taken between the inception of the idea of the Daguerre Memorial and its completion. In that case the committee had very possibly been spared the mortification of reporting a deficit of five thousand dollars to the Washington Convention, and much of the present somewhat strained relations between various photographic editors had not been. It may be that the Memorial was unfortunate in its friends. The fact that it was advocated by a leading New York photographic journal may have had something to do with the rather lukewarm support extended by rival journals. There is a possibility also that not a few dollars failed to be forthcoming because their possessors, knowing something of photographic history, cared very little about helping to erect a memorial to the very clever scene painter, who had the wit to turn the discoveries of another to his own profit, and to claim as his that which in part rightfully belonged to another. But whatever the cause, the fact remains sadly true that there is a deficit of five thousand dollars which must be met. A goodly portion of the amount was raised at the convention; the balance must be raised by voluntary subscriptions, and we call upon the amateur photographers and camera clubs of America to send us subscriptions for this purpose. All subscriptions will be duly acknowledged and promptly forwarded to the committee.

New Camera Clubs.—The amateurs of Farley, Iowa, and Holliston, Mass., have recently organized camera clubs. The officers of the Farley Camera Club are: President, Frank A. Joseph; Vice-President, Arthur Moynihan; Secretary and Treasurer, Karl Englehard. Holliston Camera Club: President, J. N. Fiske; Secretary and Treasurer, E. A. Daniels. The club meets bi-monthly at the studio of the local photographer.



NEGATIVE BY GEO. B. SHELDON, JR.

ART PHOTO-ETCHING CO.

FLOWER GARDENS AND DAIRY.

PROSPECT PARK, BROOKLYN.

Kodak Cameras.—How extensively these little cameras have come into use is shown by a correspondent who lately attended the "Passion Play" at Oberammergau, Bohemia. He saw many Americans there, most of whom were equipped with "Kodaks." A steady sitting of eight hours is required to see the play, which is described as being "magnificent." No photographing is allowed inside of the theatre.

Another correspondent says: "The Kodak, by the way, is seen *everywhere*. They are used by all nations."

The Photograph Exhibit at the Convention.—We were greatly disappointed at the poor and slim display of photographs at the convention. Space will not permit in this number an extended notice, which will be given in our next. There was no system in hanging the pictures, most of the exhibitors having to do it themselves. In general it was an exhibition largely of gallery work and concerned mostly professional photographers.

International Photographic Exhibition.—The Photographic Society of India propose to hold an exhibition in Calcutta early in the month of December next. The exhibition will embrace every branch of art and manufacture. Five gold, fifteen silver, and fifteen bronze medals will be awarded, of which one gold, five silver, and five bronze are reserved for amateurs of the world. In addition to the above a special medal will be awarded for the best photograph in the exhibition. The medals will be awarded in the following classes: Class 1, landscapes, architecture, interiors; class 2, portraits and groups; class 3, genre pictures and studies; class 4, photographs of objects in motion; class 5, lantern slides; class 6, photo-mechanical processes; class 7, apparatus and appliances. All goods and pictures, carriage paid, should be addressed to the Exhibition Committee, Photographic Society of India, Asiatic Society's Buildings, Calcutta, and must reach them not later than November 15, 1890.

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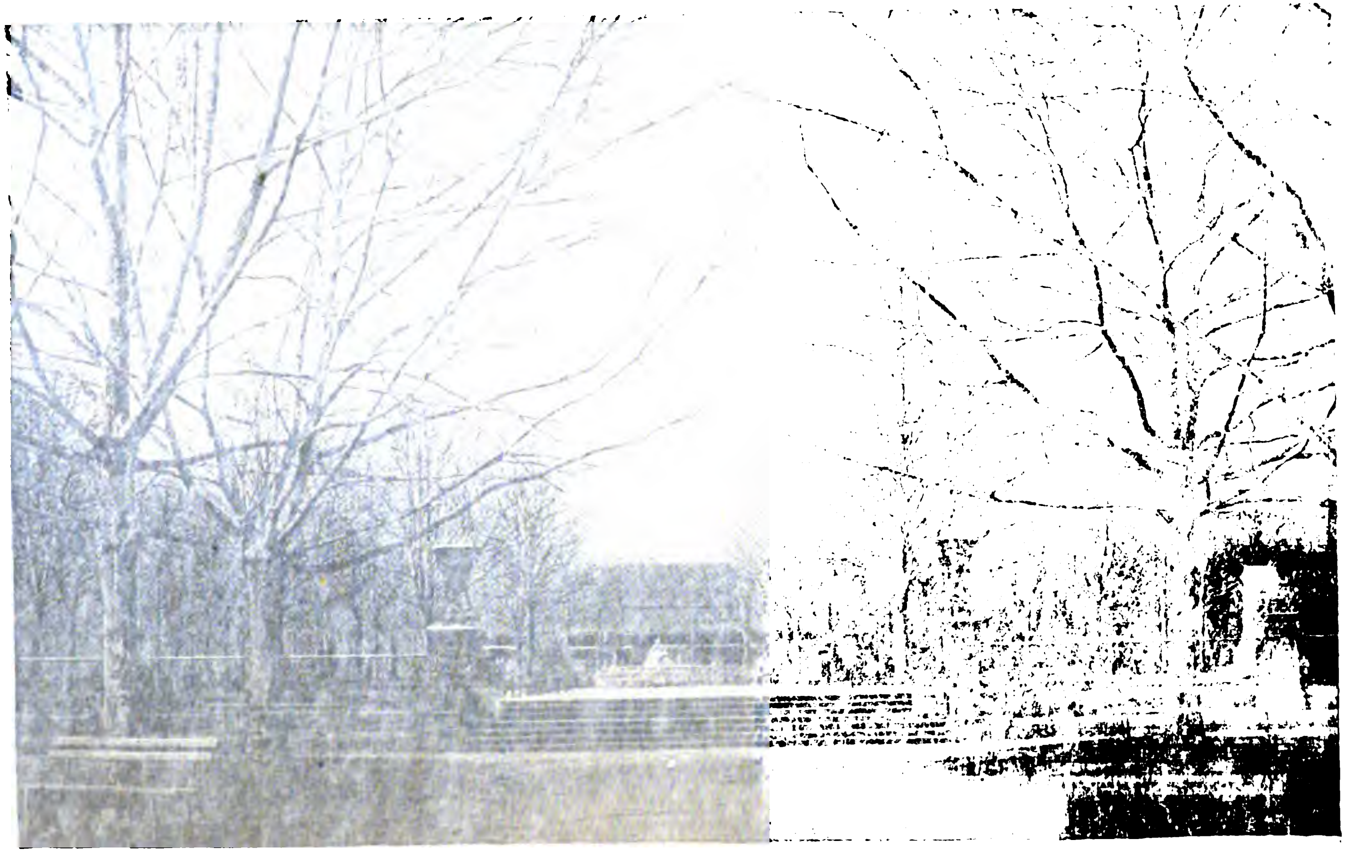
ENGLISH NOTES.

BY THOMAS BOLAS.

The Photographic Image.—In a lecture recently given at the Royal Institution, Professor Raphael Meldola summarizes our knowledge of the nature of the photographic image. After having shown by experiment before the audience, and by reference to the labors of such investigators as Scheele, Herschel, Draper, and others, which show that when silver haloids are exposed to light some halogen is either set free or passed over to a halogen absorbent which is present, he said of the compounds forming the image, that: "The chemical nature of the colored products of photo-chemical decomposition is still enshrouded in mystery. Beyond the fact that they contain less halogen than the normal salt we are not much in advance of the knowledge bequeathed to us by Scheele in the last century." The main difficulty in the way of investigation is the fact that the products of the action of light are only formed in minute quantity—what the lecturer called [illegible] Moreover the existence of these colored products seems generally to be determined [illegible] and dependent upon the presence of considerable excess of the original haloid salt. [illegible]



NEGATIVE BY GEO. READ, BOSTON.

ART PHOTOGRAVURE CO.

BRONZE GATEWAYS AND DAIRY

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The image instantaneously impressed on an ordinary dry plate may not be of the same nature as the change wrought in the case of a "photo-salt," where the change in color is visible when the exposure is long, but it is probable that the change is of the same nature—namely, chemical, in each case. That the change is chemical rather than physical is supported by the fact that in each case halogen absorbents hasten the action, while halogenising agents destroy or diminish the action.

Aluminium for Photographic Apparatus.—Now that aluminium is sold in London at as low a price as 6s. a pound, and the metal can be bought in the form of sheets, tubes, and rods of various sections, one may expect it to come into very general use for the metal work of the camera, as its specific gravity is only 2.56, as against something like 8.5 for brass, and it is quite as rigid, tough, and strong as most ordinary commercial brasses. It works readily at the lathe, a high speed and acute angled tool being required. Lens mounts and other fittings of aluminium have recently been made by Messrs. Beck & Co.

Obtaining Reversed Negatives on Gelatine Plates.—Over a month ago Mr. Thomas Bedding published in the *British Journal of Photography* a method of making a reversed negative from an ordinary negative by contact printing, the method being analogous to the "nitric acid method" which was practiced years ago on collodion emulsion plates, and Mr. Bedding's present process, if taken in conjunction with modifications since introduced, seems likely to be of value. A positive on an ordinary gelatino-bromide plate is made from the negative in the usual way, any developer being used, and this positive must be thoroughly washed, but not fixed. The image which one may, at any rate for the present purpose, regard as consisting of metallic silver is now converted into chloride of silver by immersing the plate for about five minutes in a chlorinating solution such, for example, as

Saturated solution of bichromate of potassium, . .	3 fluid drams.
Hydrochloric acid, ...	1 fluid dram.
Water, ...	6 ounces.

The film having now been washed the chloride of silver image is dissolved out by equal parts of strong ammonia and water, a process which may take five minutes or more, the bromide of the film being practically untouched by the ammonia. It sometimes happens that both these processes have to be repeated, and for dissolving away the chloride image there may be, as the editor of the *British Journal of Photography* points out, advantages in the use of a semi-saturated solution of chloride of magnesium instead of ammonia. The image having been thus converted into chloride of silver and removed, the "reverse" of bromide is washed, exposed to light and developed in the ordinary way. This method requires further experiments to become available for every-day work, and it is obviously better adapted for giving good results with thinly-coated plates than with thickly-coated plates.

Dr. Emerson's "Pictures of East Anglian Life."—Before the advertised number of copies of this series was issued it was found that some of the plates showed such signs of wear as to give results which the author did not consider quite up to the standard, and consequently the issue has been completed in the form containing ten plates only, together with short preface and notes, the price being ten shillings on rough drawing paper or fifteen shillings on India paper. Many will doubtless be glad to have this set of typical pictures according to Dr. Emerson's views. Probably no one has done more than Dr. Emerson to break down the old conventionalisms of the photographer which were expressed in such canons as "never direct the camera towards the sun," or "only photograph out of doors in the clearest weather," and ten years ago a landscape taken in opposition to one of these rules had scarcely a chance even of being admitted to an exhibition, much less of getting an award. Now the out-door photographer tends to look on the abnormally bright and clear day as rather less suitable for obtaining pictorial effects than a day more like the average of days, and a photograph which shows no trace of the atmosphere as well as the earth is looked on as a one-sided production.

Drying Negatives Quickly.—In *Photography* of August 7th, Professor Burton deals with the question of drying negatives, and after pointing out that plates of to-day, with their tolerably hard films may, especially after treatment with the alum bath, often be dried at a somewhat high temperature without much risk of damage, it is better not to use artificial heat, as apart from the risk of the film melting there is a tendency for any pin-holes to become enlarged, and indeed clear white lines become widened, owing to a tendency of the denser parts of the film to shrink together when exposed to heat in a wet state. The best way of drying, says Burton, is to use alcohol or spirit, and flowing the spirit on the film is far less satisfactory than using a dish and covering the film to the depth of an eighth of an inch, a cover to the dish not only serving to prevent evaporation of the spirit but also to hinder the absorption of moisture from the air. After immersion in the alcohol for ten minutes or less, and the careful wiping of the film on removal, a few minutes' exposure in a warm place will complete the drying. Careful surface drying with a tuft of cotton wool is desirable before immersion in the spirit. For very thick films a bath of ether after the alcohol is desirable when the greatest speed of drying is required.

Home-Made Backgrounds.—The amateur portraitist often wants something better than the extemporized blanket, sheet, or table cover, and such persons will find the directions given by Mr. Parsons for preparing backgrounds thoroughly practical. He says: Cover your calico with a paper surface, and in working have your frame, calico, tacks, paste, and paper all at hand; let your paste be warm and free from grit, freshly made, with a little dry alum previously mixed in with the flour; put your calico *into the paste* for a few minutes, then well wring it out, strain and tack to the frame, and finish up by fixing the paper at once, so that the whole strains and drys out together. There will be little chance of the two coming apart then, or of any creases or bagginess resulting. Good brown paper will do capitally and in itself often forms a useful background, but sizing and painting, or stippling to taste upon it is easy.

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The Celluloid Transparent Film.

BY G. D. MILBURN.

[Read before the Convention at Washington, D. C., August, 1890.]

Ladies and Gentlemen: A substitute for glass for negatives being of universal interest to all, I wish to say a few words of the progress the Eastman Company have made with their transparent films during the past year.

For the edification of those present who are not acquainted with the subject, I wish to say that the films in question are thin, flexible, celluloid, sensitive films, and take the place of glass dry plates, so that they can be spooled on a roll and carried right in the camera as a magazine and used at the pleasure of the operator, doing away with both bulk and weight of the glass dry plate.

Last year at this time the only evidence the Eastman Company could show for their claim of having invented and perfected these thin films in continuous lengths were a few samples, but now they actually have the goods on the market, and the orders for the films are so great that although they have a large plant for the express purpose of manufacturing them, still they can fill but comparatively a very small percentage of their orders, making some skeptical people say that they believe the Eastman Company have been forced to discontinue manufacturing the films. The facts are that the Eastman Company are working night and day on these films, and are producing from six hundred to eight hundred linear feet of transparent film, forty-one inches wide, per day, one-third of this product going to Europe.

Our claim of invention has been disputed by some of our contemporaries, but we are happy to state that the United States courts have seen fit to sustain our claim to the extent of granting us letters patent, and also of setting aside an injunction brought against us by the Celluloid Company of New Jersey, one of the largest concerns in the world. The Eastman Company do not claim that they are the inventors of celluloid, nor the first to coat it with a sensitive emulsion, but their claim of invention is, a flexible substitute for glass for negatives in continuous lengths. I here want to call your attention to a spool of the films, to its even, smooth appearance and uniformity of surface. The great desideratum in a film of this kind is flexibility, and that you will find here; at the same time the base is perfectly transparent and is impervious to the chemicals in the developer. Among the many difficulties encountered at the commencement of the manufacture of these films and which has caused much conjecture as to its origin, is what we term electric-spark impression, caused by an electric spark imprinting itself on the sensitive surface during the process of manufacture. This evil has entirely been gotten rid of, and now there seems to be only one trouble, and that is to manufacture them in quantities sufficient to meet the demand. We believe that it is only a matter of time when you all will use these films for out-door photographing.

I wish to call your attention to our little Kodak souvenir, as the negatives are made on the Eastman Company's transparent films, and I think you will all agree with me that these pictures are as clear and brilliant as those made on dry plate.

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CORRESPONDENCE.

A TRIP TO THE LAND OF THE MIDNIGHT SUN.

To the Editors of the American Amateur Photographer:

Nothing has interested me more in my travels than the market places of the old towns which I have visited. They abound in interesting subjects, and at the very beginning of my trip I began the collection of market scenes. This was at Hamburgh, in the flower market, where the women still wear the peasant costume. The old houses of Hamburgh are extremely interesting, especially those that overhang the canals, many of which are very picturesque.

On my way North I spent a day at Lubeck, a town full of interest; the old gateways are fine and the street scenes full of life, but above all the market place attracted me. Here the women wore a peculiar hat, white trimmed with green, quite different from that of Hamburgh, and the mediæval buildings inclosing the place formed a fine background.

The next point of interest was Copenhagen, where I spent five days of perfect weather for camera work. The fish market was visited more than once. The Danish fisherwomen are very fine looking, with beautiful rosy complexions. Even the old women have a brilliant color, which shows to advantage against the white of their flapping, broad-brimmed sunbonnets. The Exchange, with its Dragon tower, was a subject of interest, and the Rosenburg castle and garden with the statue of Hans Christian Andersen were also visited, camera in hand. The statue I tried to get with children playing about it, not a very difficult undertaking, as small boys and girls are never far away from the statue of the master story-teller.

As seen from the water Copenhagen is very picturesque, and as I left the city by steamboat I took advantage of this last chance.

Fortunately for me we made a two weeks' stay at Stockholm, and I seized the moments of sunshine when they came. But rain was the order of the day. In spite of the storm I obtained a few views. One from my hotel window; this, with the waters of the Baltic full of shipping for a foreground, was a view ready made. Turning the camera a little to the right, I obtained quite a different view of the city, with the Riddarholm church in the distance. I spent several mornings in the market place watching for chances, and I secured a number of good groups. The women generally wore plaid handkerchiefs on their heads.

Among the many trips we made in the neighborhood of Stockholm was one to Upsala, thence to Dalarne, visiting Leksund and Rattvick, a region little visited by tourists and where the peasants still wear a national costume. But time and space prevent a detailed description of these interesting places.

We left Sweden by the Gotha canal, a most beautiful trip, and for us full of sunshine. I was able to take many pretty scenes during the three days' trip to Gottenburg. Here I began to use my changing bag, modeled after the one mentioned by Mr. Simpson. The days and nights of perpetual sunshine were beginning. Up to ten o'clock it was quite light, and the twilight lasted until eleven.

From Gottenburg to Christiania took a day and a half. We approached the latter city by the beautiful fiord. After a rest of a few days we started north to Trondhjem, there to take the steamer to the North Cape.

Christiania did not especially interest me beyond the market place. But Trondhjem did seem very far north; things there seemed new and strange. The cathedral of St. Olaf was exceedingly interesting and its surroundings picturesque. The grave-yard, used as a people's park, contains many good figures. The fish warehouses in long lines were different from anything I had seen before. We had really reached the land of the midnight sun at last, for twilight merged into dawn without any darkness. I could read at eleven P.M. without any difficulty.

We sailed at ten P.M., June 25th, for the North Cape. But to fitly describe the grandeur and beauty of this North Cape trip, one would need go far beyond the limits of a letter. It is a unique experience in a traveler's life. During the eight days' voyage from Trondhjem to the Cape and return, one is kept constantly on the alert. There are no hours of darkness and always something of interest to be seen, so that one begrudges the time given to necessary sleep.

The fishing boats of the far north are interesting and picturesque, resembling the old Viking ships in shape. One whole afternoon I spent watching my chances for some good pictures of them.

The scenery among the snow-covered peaks of the Lofoden Islands is grand. Nearly every day we stopped at some point where the passengers could land. Tromso and Hammerfest we saw well. The Lapp settlement at the former place afforded some good subjects for the camera, and Hammerfest we were fortunate in seeing before its destruction by fire a few weeks later. A severe storm raged at the Cape so we did not see the midnight sun there. But we saw it three times during the trip, twice shining brilliantly and once slightly veiled with clouds. This latter was especially beautiful. The many plates I exposed are still waiting for development.

The chief features that stand out in my memory of this trip are rugged mountains rising at the water's edge, huge masses of rock, the summits covered with patches of snow, and in some cases, as in the Lyngen fiord, with immense glaciers gleaming brightly in the sun, and lastly, the perpetual sunlight.

My changing bag was of the utmost service here as later. For two months it was in constant use. I have not regretted not having a roll holder, especially since meeting an Englishman with one, who complained that it had given him much trouble. The Kodak is seen everywhere and is used by all nations.

We spent three weeks making driving tours in Norway after our return from the North Cape trip, but for me these tours were not very satisfactory, as we had very bad weather most of the time. However, we arrived in Bergen on market day and the sun shone for some hours. It was most interesting. The women of Bergen wear a most picturesque costume; the head gear is fine, a white cap with wings projecting from the sides. I was kept very busy while the sunlight lasted. In looking my note-book over I find that I took more pictures than I remembered during this Norway trip, and out of the number there must be some good ones.

I have been in Holland about ten days. Here, too, on every side are living pictures. I have visited several of the less known towns on the Zuyder Zee, all exceedingly interesting, especially Kampen, where one sees the peasant life to perfection; the figure subjects here are all that an artist could desire.

ELIZABETH A. SLADE.

Amsterdam, August 7, 1890.

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SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

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The Society of Amateur Photographers of New York.—During the month of August no meetings have been held, but one or two enjoyable excursions have been made by a few of the members. The work of fitting up the rooms has been completed, and now the society affords very much larger facilities than ever before. Tasteful rugs have been put down in the parlor and library rooms, special periodical shelves and tables put in, by which the American and foreign journals are kept separate. All of the rooms are lighted by the incandescent electric light and heated by steam. The Lantern Slide Committee has decided to adopt a rollable paraffined cotton screen through which it is expected the pictures may be seen without showing the grain of the cloth. The membership of the society is rapidly increasing and some important work is expected to be made during the winter months. The first regular monthly meeting occurs on Tuesday, September 9th. An exhibition of lantern slides will be held September 26th.

The Photographic Section of the American Institute.—An excursion to Glen Island, Thursday, September 4th, was taken by members and their friends, terminating in a fine dinner given in honor of the occasion at the hotel on the island. Many chances to photograph scenes along the banks of the East River were taken advantage of.

The American Lantern Slide Interchange.—During the summer months the manager has been making arrangements to secure shipments of slides from foreign clubs for the fall and winter season. Shipments are pledged to be sent from the Vienna Club of Amateur Photographers, from the members of the Photographic Society of the North of France, from the Amateur Photographic Association of Victoria, East Melbourne, Australia, and from one or two English societies.

The Pacific Coast Amateur Photographic Association has been admitted to membership, and a pending application from the Detroit (Michigan) Camera Club is waiting the decision of the committee. The executive committee, George Bullock, Wm. H. Rau, and F. C. Beach, has lately sent a letter of instruction to the several associations requesting that lantern slides for the present season be delivered in New York by December 1st next. An interesting variety of slides is promised for this season.

QUERIES.

23.—J. C. H. asks: 1.—Would you advise the amateur to make his own chloride of gold? 2.—How is chloride of gold prepared? 3.—Does a weak fixing bath change the color of toned prints? 4.—What strength of fixing bath is best?

24.—M. G. D. asks for a good formula for sensitizing albumen paper, also for a formula for albumenizing paper.

25.—S. asks if there is any method of removing what seems to be a superficial granulation on a negative, presumably caused by alum in the hypo bath, and also the best means of preventing a recurrence of the trouble.

ANSWER.

23. 1.—No. Too much trouble and expense. 2.—To make chloride of gold: Bend a quarter-eagle gold piece and place it in a wide-mouthed bottle; then mix one dram of nitric acid with five drams of hydrochloride acid, and add about three drams of this mixture to the gold in the flask. Place the flask in the sun in the open air until the gold is nearly all dissolved, occasionally shaking it. Then pour the clear liquid into a fifteen-ounce bottle, add a little more of the mixed acids to the gold, and when the latter is dissolved, pour the clear liquid into the fifteen-ounce bottle, adding to the liquid remaining in the flask eight or ten ounces of water. Shake well and allow the deposit to settle. While this is taking place, add gradually to the contents of the fifteen-ounce bottle small lumps of common whiting until the effervescence ceases, an indication that all the acid has been neutralized. Now add the water in the flask and make up the bulk to fifteen ounces. This will give a slightly acid solution, containing one grain to the ounce, which will keep indefinitely in a dark place. 3—As a rule prints change more or less in tone in the fixing bath, much depending on the method of toning. A strong bath has greater bleaching action than a weak one. 4.—One to five is a good strength for the fixing bath, but it may be used weaker.

24.—My favorite bath contains sixty grains each of nitrate of silver and nitrate of ammonium to each ounce of water. The proportions of the salts may be reduced if a weaker bath is preferred. I would not advise M. G. D. to attempt to albumenize paper. Much the best and cheapest way is to buy it.

25.—I must confess myself somewhat at a loss to understand S.'s difficulty. The usual effect of the alum-hypo bath, when things go wrong, is to produce a mottling of the film due to sulphuration. This is incurable, as, I suspect, is also the granulation of which S. complains. Possibly rubbing the film with a soft cloth moistened with alcohol might help matters. To avoid the recurrence of the trouble, discard the use of alum in the fixing bath and use the acid fixing bath.

BOOKS AND EXCHANGES.

DIE ORTHOSKIAGRAPHISCHE PHOTOGRAPHIE. Ludwig David and Charles Scolik. Halle 1690; Wilhelm Knapp.

This is the second and concluding volume of David and Scolik's "Photographie mit Bromsilbergelatine," and, as its title implies, it is devoted to a discussion of orthochromatic methods. The subject is handled in an exhaustive manner, and unless Mr. Bothamley gives a hand-book on the subject, the present treatment will probably remain the fullest discussion of the subject readily accessible. For practical photographers the closing divisions of the book will have the greatest value. They treat of failures and their remedies, and various photographic formulæ. An English translation of these two sections would be a boon to American photographers. A careful reading of the two volumes has convinced us that Messrs. David and Scolik have produced a work which for exhaustiveness, practical character, and general reliability, will long remain in the front rank of photographic publications.

THE MODERN PRACTICE OF RETOUCHING NEGATIVES; Sixth Edition. THE PHOTOGRAPHIC INSTRUCTOR; Second Edition.

These two books bear the well-known imprint of the Scovill & Adams Company, and are both too well known to need extended notice. The former gives practical instructions in the art of retouching, and the latter is a general guide to the practice of photography, based on the printed lessons used in the Chautauqua School of Photography. The second edition is an enlargement of the first, and the book is one which will be read with profit by the numerous class of beginners in photography, for whom it was written.

AFRICA AS SEEN BY THOMAS STEVENS AND THE HAWKEYE. Boston, 1890; the Blair Camera Company.

When Thomas Stevens set out on his search for Stanley something more than a year ago, he took with him a Hawkeye hand camera, and the Blair Company have made an attractive advertising pamphlet of a few of his experiences. Six illustrations from Stevens' negatives, including the first negative ever made of the remarkable twin mountain, Kilimanjaro. The subject matter, although slight, is interesting, and the pamphlet is a strong witness to the value of a hand camera on exploring trips.

From Sweet, Wallach & Co. we have received a classified catalogue of photographic supplies which is a model of compactness and completeness, forming a convenient reference book for those who have occasion for keeping the run of photographic goods, and a handy guide for would-be purchasers. We notice that the firm has removed to larger and more convenient quarters at 215-219 Wabash Avenue, where they have every convenience for the accommodation of patrons, including completely-appointed developing rooms.

Part fourteen of Dr. Fabre's "Photographic Encyclopedia" contains the conclusion of the description of the carbon process, a full account of the various photo-collographic methods, and the beginning of the description of photo-typographic methods, all of which are treated with fullness and detail.

ETUDES DES LENTILLES ET OBJECTIFS PHOTOGRAPHIQUES. P. Moëssard. Volumes I. and II.

LE TEMPS DE POSE EN PHOTOGRAPHIE. R. Clement.

PROCEDES PELLICULAIRES. George Belagny. Volumes I. and II.

These treatises bear the well-known imprint of Gauthier-Villars et Fils, Paris, and they are all worthy of careful study, being the results of original investigations on the part of their respective authors. M. Moëssard's "Study of Lenses and Objectives" contains the description of a method of making a mathematical study of a lens by means of an ingenious instrument called the "Tourniquet," which bears some resemblance to an ordinary camera. The method is founded on the laws of optics, and in these days of lenses of many names and much vaunted powers, it would be well if some disinterested party were to subject them to the test of the "Tourniquet," and publish the results for the guidance of the sorely perplexed amateur.

M. Clement has set himself to the difficult task of explaining clearly and succinctly the influence of the various factors which are to be taken into account when a plate is to be exposed. These are treated under three heads, optical, chemical, and physical, and much light is thrown on the question of exposure. Numerous tables add to the value of the book.

M. Balagny has long been known as a tireless experimenter in the making of film or pellicular sensitive surfaces, and in the volume before us he gives the results of his researches, together with notes on development, printing, stripping, etc. While the book is devoted entirely to M. Balagny's own methods of making film negatives, it contains much that has an interest and value for those who use other makes of films.

PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

Enlargements.—The end of the summer brings to the owner of a hand camera a decided increase in the number of his negatives. Some of them will undoubtedly make very fine enlargements. Our advertisers, Messrs. Miller & Litchfield, make a specialty of this class of work, and negatives may safely be intrusted to them with the assurance that the best possible results will be obtained.

Apparatus at the Convention.—We were very much disappointed in the slim exhibit of apparatus at the Washington Convention, and the way it was huddled together in different rooms made it difficult to examine. The lecture-room was divided by a screen running crosswise. The portion near the entrance was utilized for exhibits. Entering this room, on the right was the stand of the Collins Manufacturing Company, and the United States Photographic Supply Company with hundreds of small boxes of eikonogen on exhibition, as well as examples of their furniture and specimen transparencies. Smith & Pattison had their new burnisher on exhibition; Sweet, Wallach & Co. exhibited a model of their improved turnover hand camera; the Wilson-Hood-Cheny Co., and Buchanan, Bromley & Co. also had small exhibits of their specialties including standard magnesium lamps. Adjoining the division screen on the opposite side of the center aisle was the Eastman stand, simply a small table for the exhibition of Kodaks. Hung on both sides of the screen were some very fine bromide enlargements by the Eastman Company. Near them on the screen were some excellent platinotype prints by Willis & Clements, and direct enlarged silver prints on plain paper by another party. The balance of the floor space was taken up by an energetic background manufacturer, who displayed the peculiarities of the article very intelligently.

The main hall or space for exhibits was located off by itself in the center of the east wing of the Museum. As this room was entered we noticed a full line of exhibits on our left by the Blair Camera Company, showing their new cameras, tripods, and photographic preparations, and many of their noted Hawkeye Hand Cameras. The space in this room was square, with a narrow aisle around it, parallel with the walls. Turning down the first aisle, next to the Blair Company, was a full line of Entrekin's well-known burnishers. Adjoining his space was a very tasteful display of Packard's backgrounds from Boston. In the corner was located the extensive exhibit of the Eagle Dry Plate Works, where visitors were entertained by the persevering Mr. Pickerell. Between one and two hundred beautiful photographs of a diverse character hung on the walls.

Going to the right in the rear aisle was on our left the pretty exhibit of the Allen & Rowell Company, showing the perfection of work done on their celluloid film. There were beautiful examples of carbon printing in which they excel. The adjoining space was occupied by E. J. Pullman, of Washington, D. C., who exhibited for the Buffalo Argentic Paper Company a new semi-automatic exposing box for contact printing. The light is located in a compartment at one side of the box and is reflected upward by a mirror placed at an angle of forty-five degrees just under the negative. A shutter, quickly operated, admits and cuts off the light as wanted by pressing a button. The sheet is drawn over the negative by two rolls operated by a crank; it is then clamped down in contact with the negative, the exposure made, and finally continued on, coming out on a table on the other side. Devices are arranged for accurately centering the sheets, also for working paper continuously from a roll. We believe it was invented by D. C. Hoover. Some very creditable work made by the company was shown. Mr. Pullman also exhibited one of the most compact little magazine hand cameras, called "The Genii," invented by W. E. Schneider, that we have seen. The plates, held in metal carriers, are placed in a thin tin box, having one side arranged to fly open when the box is inserted in the magazine compartment of the camera, thereby putting the plate into position for exposure. By a simple movement the exposed plates are sent to the rear and inserted behind those unexposed. After all are exposed the box may be removed; in doing so, the cover is automatically shut. A fresh box is easily put in. It is provided with a very compact, quick-acting shutter, arranged for time and instantaneous exposures.

The London Chemical Company had on exhibition specimens of Hale's standard preparations, such as bluing for clearing up high lights in negatives, retouching fluid, and lubricator, with specimen negatives showing the effect of the solutions.

Occupying a large space in the corner was a splendid exhibit of photographs made on the Cramer Dry Plate, fully sustaining the reputation for fine work which this plate has so long held. Mr. Wells occupied the room and explained, in his easy and affable way, the merits of the article. Continuing down the next aisle to the right we noticed a very creditable exhibit of goods by the Knorr Manufacturing Company, and the Standard Dry Plate Company. Specimen photographs shown by the latter proved that plates of good quality and reliability are made by them.

J. W. Bryant had a boy continually slide his tasteful and new backgrounds, held on wires, back and forth for the inspection of visitors. The front wall of the square room was appropriated by the Seed Dry Plate Company, and was a very fine exhibit of the variety of photographs that can be easily made on their plates. There was more of a departure from a sole display of portraits in their exhibit than in any others. On a table in the Seed Company's room was a very beautiful exhibit of enameled or burnt-in photographs by Benjamin Brothers & Wiener. The process is claimed to be simple and easy to work.

In the center of the hall was a large space occupied by E. & H. T. Anthony & Co., who exhibited a great variety of apparatus, including new front-focusing cameras, and their latest magazine hand camera. Behind Anthonys' exhibit was a full line of Acme Burnishers, with a model of their improved cabinet cutter, or trimmer, by which a number of prints are accurately trimmed at one time. Near them was the stand of Benjamin French & Co., filled with a large display of Darlot, the new Voightländer W. A. lenses, and Euryscopes, now so extensively used by galleries and scientists.

O. C. White had a fine exhibit of his patent adjustable head-rest attachment for chairs, which took a medal at the Minneapolis convention. The latest Bausch & Lomb shutter was also to be seen and was a marvel of fine workmanship and certainty of working, being adapted for time and instantaneous exposures. The noticeable piece of apparatus in the exhibit of C. H. Codman & Co. was their new adjustable camera stand intended for gallery use, which was awarded a medal. It is a platform on which the camera rests, hung between two posts, by wire or chain, from two coiled-up springs set in the top portions of the posts. The tension on the springs is regulated by screws to balance the weight on the platform; thus it is adjustable for different cameras. The posts are high enough to allow the platform to be raised six feet from the floor, or to be lowered within thirteen inches of it, a feature which is sometimes useful in photographing children.

Situated in the south-east gallery, by himself, over the Museum restaurant, was the large display of special backgrounds and furniture of Lafayette Seavy; he had a great variety of goods, and quite an artistic display of photographs designed to show the effect of the backgrounds. As he was out of sight from the floor he employed musicians every afternoon to play popular airs, for the benefit of his visitors, which at times became quite an attraction.

Several well-known manufacturers and dealers sent no exhibits, we suppose because they knew the space was limited. The space used was donated by the Museum authorities. We should not omit to mention the uniform courtesy extended to all by the genial Mr. Thooms W. Smillie, the official photographer of the Museum.

One of the most marked improvements in photographic appliances was a new camera shutter, exhibited by the Kalamazoo Shutter Company of Kalamazoo, Mich. It is styled the "Low Kazoo" shutter, and has the great advantage of being always set and is ever ready to respond to the pressure on the pneumatic bulb. It has an adjustable spring back that will fit any size of lens tube. It is a very finely finished shutter, being highly polished and nickel-plated, with a mahogany-finished back. Price of this "Kazoo" is very low, costing only six dollars each. For other particulars address the Kalamazoo Shutter Company of Kalamazoo, Mich.

F. C. B.

From Bartholomew & Peckham, 18 Spruce Street, New York, we have received a beautifully illustrated pamphlet in half tone work, and it is a most creditable production from that enterprising firm.

Kodak Souvenir.—Four pages of bromide prints in different sizes of many of the principal buildings in Washington, D. C., constitute this pretty "Washington Convention" souvenir. With their customary liberality the Eastman Company thus show to the world actual results obtained on preparations of their own manufacture. It is convincing proof of the value and utility of their apparatus.

Clearing Solution.—Mr. J. F. Lloyd is making a very useful clearing and hardening solution which not only hardens and clears the gelatine film, but also clears and improves silver prints. He has associated with him Mr. A. Peebles Smith, who has devised an improved colorless eikonogen developer particularly adapted for making lantern transparencies. Mr. Lloyd is determined to furnish amateurs with reliable photographic necessaries, and is building up an extensive trade in consequence.

Bausch & Lomb Optical Company's Exhibit at the Meeting of the American Association of Photographers Held at Washington.—The firm was represented by Adolph Lomb and W. Drescher. There were shown the Rapid Universal Lenses, Alvan G. Clark Lenses, Iris Diaphragm fitted to a Rapid Universal Lens, special lenses for Detective cameras, the New Model Diaphragm Shutter, Hoover Shutter, prisms for photo-mechanical processes, camera levels, focusing and retouching glasses, besides a large frame wherein photographs of different sizes were exhibited, showing the capacity of the lenses with which the same were produced. The lenses and shutters are also made in aluminum.

United States Photographic Patents

Issued in July and August, 1890.

JULY 22d.

432,530—Composite Heliochromy; Fred E. Ives, Philadelphia, Pa.

AUGUST 5th.

433,553—Photographic Camera; G. D. Thompson, Cincinnati, Ohio.
433,745—Camera Shutter; W. E. Schneider, Washington, D. C.
433,746—Camera; W. E. Schneider, Washington, D. C.
433,774—Roll-Holder for Photographic Films; G. Eastman and P. H. Yawman, Rochester, N. Y.
433,775—Roll-Holder for Photographic Films; G. Eastman, Rochester, N. Y.

AUGUST 12th.

433,963—Photographic Camera; W. Sanders, Liverpool, England.
434,046—Photographic Camera; F. W. Hutchins, Warren, Ohio.
434,090—Photographic Camera; O. Planl, Dresden, Germany.
434,188—Photographic Printing Frame; W. H. Lewis, Huntington, N. Y.

AUGUST 19th.

434,451—Photographic Mounting Machine; L. C. Madsen, Sleepy Eye, Minn.
434,622—Device for making photographic camera beds rigid; H. P. Ball, Philadelphia, Pa.
434,807—Photographic Camera; J. M. Rhodes, Covington, Indiana.

AUGUST 26th.

435,056—Photographic Posing Chair; J. M. Dow.
435,080—Camera; W. R. Tobias, Perth Amboy, N. Y.
435,271—Photographic Objective; E. Abbe and P. Rudolph, Tena, Saxe-Weimar, Germany.
435,315—Tripod; J. R. Moeller, Grand Island, Nebraska.
435,335—Lens Tube for Photographic Apparatus; W. H. Trueman, Philadelphia, Pa.
435,342—Photographic Camera; J. E. Blackmore, Grand Rapids, Mich.

List of Dark-Rooms Open to the Use of Amateurs.

BUCHANAN, BROMLEY & CO.—1226 *Arch Street, Philadelphia.* Open the year round.

LURAY INN—*Luray, Virginia.*

PROSPECT HOUSE—*Blue Mountain Lake, Hamilton Co., New York.*

HIGH FALLS HOUSE—*Dingman's Ferry, Penn.*

THE STANLEY HOUSE—*Lake Joseph, Muskoka, Ont.*

CASCADE LAKE HOUSE—*Adirondacks, N. Y.*

HOTEL CORONADO—*San Diego, California.*

THE RAYMOND—*East Pasadena, California.*

SAN MARCO—*Santa Barbara, California.*

DEL MONTE—*Monterey, California.*

SPENCER HOUSE—*Niagara Falls, New York.*

SLIDE MOUNTAIN HOUSE—*Big Indian Catskill Mountains, New York.*

FORT WILLIAM HENRY HOTEL—*Lake George, New York.*

PROFILE HOUSE—*White Mountains, New Hampshire.*

THE WESTPORT INN—*Westport, New York.*

BREEZE LAWN—*Hunter, New York.*

SWEET, WALLACH & CO.—215 *Wabash Avenue, Chicago, Ill.*

E. J. PARTRIDGE—69 *Morrison Street, Portland, Oregon.*

LAKE VIEW HOUSE—*Bolton, Lake George, New York.*

MOUNTAIN PARK HOTEL—*Hot Springs, North Carolina.*

THE CLEREMONT HOUSE—*Southwest Harbor, Mt. Desert, Maine.*

COLE'S HOTEL—*Kidder's Ferry, Cayuga Lake, New York.*

THE CHISWICK INN—*Littleton, New Hampshire.*

SAM. C. PARTRIDGE—*San Francisco,* 529 *Commercial Street.*

THE CHICAGO CAMERA CLUB—*Chicago,* 182 *Wabash Avenue.*

GAYTON A. DOUGLASS & CO.—*Chicago,* 185 *Wabash Avenue.*

THE BLAIR CAMERA CO.—*Chicago,* 208 *State Street.*

W. H. WALMSLEY, LTD.—*Philadelphia,* 1022 *Walnut Street.*

R. H. MORAN—*New York,* 396 *Broome Street.*

LOEBER BROS.—*New York,* 111 *Nassau Street.*

BARKER & STARBIRD—*Boston,* 56 *Bromfield Street.*

ARROWHEAD SPRINGS HOTEL—*San Bernardino Co., Cal.*

W. C. RUSSELL—*Baltimore, Md., North Charles Street.*

ALLEN BROS.—*No.* 14 *East Larned Street, Detroit, Mich.*

EAGLE'S MERE HOTEL—*Eagle's Mere, Sullivan County, Penn.* Supplies, plates, and chemicals.

MT. MEENAHGA, SUMMER HOME—*V. E. Terwilliger, Ellenville, N. Y.* Running water.

JENNINGS'S NEW HOTEL—*Cairo, N. Y.*

DIXON HOUSE—*Underhill, Vermont.*

C. E. HOPKINS—*Brooklyn, N. Y.,* 529 *Fulton Street.*

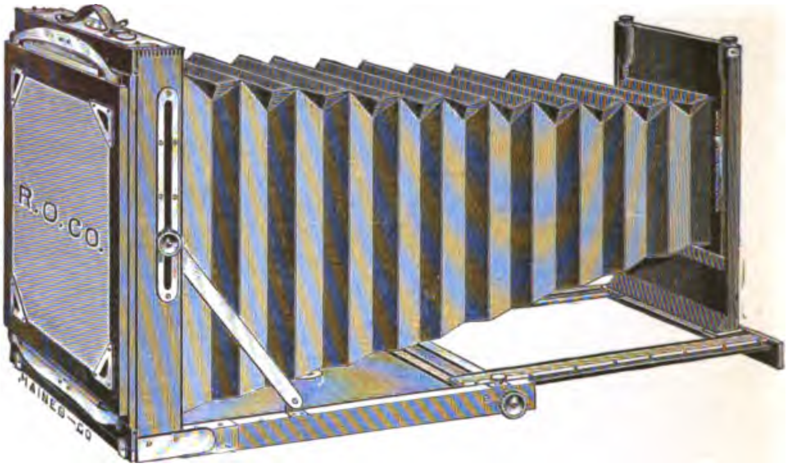
TUCKER & BUTTS—*Buffalo, N. Y.,* 37 *and* 39 *Court Street.*

AFRICAN PYTHON PHOTOGRAPHED WITH HAWKEYE CAMERA NEAR THE USERI RIVER.

"CAUTIOUSLY parting the bushes with the muzzle of the gun, I beheld the reptile of the accompanying picture, his body coiled on the ground, and his head elevated about three feet. His tongue darted from his mouth viciously as I looked through the parting in the bush. Had I been prepared to convey him to the coast, I believe I should have been tempted to capture him alive. With a slip-noose at the end of a pole, I have no doubt that he could have been secured without much trouble. A load of partridge-shot in the head, a tremendous thrashing around in the bushes, and soon the delighted negroes were dragging the python into camp. Having photographed him with my ever-ready HAWKEYE Camera, I skinned him, and brought the trophy home to New York. He was an ordinary African python, fourteen feet long—a considerable come-down from Zaidi Nubi's tree."

Extract from "Africa as Seen by Thomas Stevens and the Hawkeye," in which Mr. Stevens describes in the same happy and interesting vein which characterized his "Around the World on a Bicycle," the personnel and customs of an African expedition, a week's sport in the prolific game country adjoining the famous snow-capped mountain Kilimanjaro, with a valuable commentary on the latter, photographing a band of Masai warriors and other incidents of his trip. Fine engravings from negatives made in Interior Africa. Send 10c. in stamps for sample copy to THE BLAIR CAMERA COMPANY, Boston, Philadelphia, or Chicago.

The "Universal" Camera.



CAMERA FULLY EXTENDED.

PARTIALLY FOLDED.

FOLDED.

The Universal Camera is a modified English Pattern and is the most compact camera in market, the 6½x8½ being but 2⅝ inches thick when folded and weighs but 5 pounds, and has a draw of 20 inches.

For further description and prices, send for Catalogue to

ROCHESTER OPTICAL CO.,

Or to any Dealer in Photo. Supplies. Rochester, N. Y.

HAWORTH'S

Sensitized Albumen Paper

Is put up in unsealed packages, so that it may be examined by the purchaser.

Needs no can, no lime, or other preserving appliance.

Is free from blisters.

May be used without fuming with good results.

Works by any of the regular formulas.

HAWORTH'S

Toning and Fixing Compound

Combines toning and fixing in one simple operation.

Does not deteriorate with age, or spoil with use.

Uniformly gives results in freshness, delicacy, richness of tone, and every other respect, equal to those of the most elaborate formulas.

Eight ounces of the compound will tone and fix eight dozen 5x8 prints. Eight ounce bottle, 40 cents; sixteen ounce bottle, 75 cents.

FOR SALE BY DEALERS GENERALLY.

JOHN HAWORTH,
641 Arch Street,
PHILADELPHIA.

Dealer in
Photographic Goods
Of Every Description.

6tf

THE LATEST!

A Miniature Detective Camera, Compact and Simple.

"THE LILLIPUT"

Makes a Picture Two and-a-half inches Square. Size of Camera, 4 x 4 x 6 inches, outside measurement. Using ordinary Dry Plates. Easily handled and manipulated by any one.

These Negatives make beautiful Lantern Slides and can be enlarged to almost any size. Camera comes in a handsome Sole Leather Carrying Case, with Patent Double Holders, 108 Dry Plates and Non-Actinic Lamp. Illustrated book of instruction with each.

E. & H. T. ANTHONY & CO.,

MANUFACTURERS AND IMPORTERS OF

Photographic Instruments, Apparatus, and Supplies.

Sole Proprietors of the

Patent Satchel Detective, Schmid Detective, Fairy, Novel, and Bicycle Cameras, the Phantom Camera, the champion light weight of the world, Anthony's Reversible Back, Normandie Reversible Back, Front Focus Novelette Cameras.

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For Portrait, Landscape, and Drop-Shutter Work. Weight and space reduced to a minimum. Fourteen dozen Films weigh less than one dozen glass plates.

Sole Agents for the Celebrated Dallmeyer Lenses.

Amateur Outfits in Great Variety from $9.00 up.

Send for Catalogue or Call and Examine.

591 BROADWAY, N. Y.

More than 45 Years Established in this Line of Business.

1—2m.

"Uphold me
Father,
in my
loneliness
A little
longer!

NEG. BY CATHARINE WEED BARNES.

ARTOTYPE, E. BIERSTADT, N. Y.

ENOCH ARDEN

Aid me,
give me strength
Not to tell her,
never to
let her
know."

T[illegible]

AMATEU[illegible] HER.

A M[illegible]

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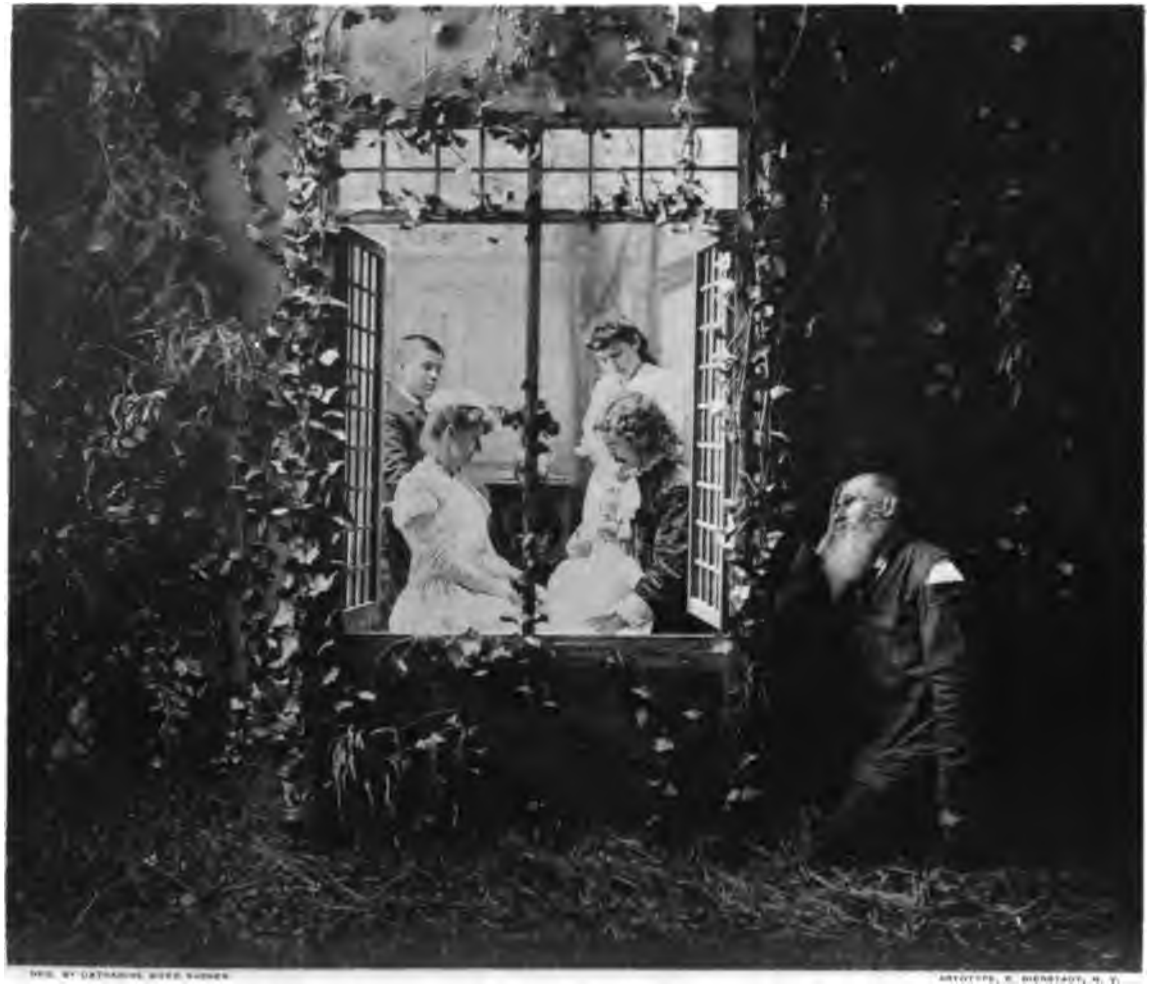
This is the history of the League of Americ[illegible] ican Canoe Association, the National Lawn-Tennis A[illegible] ers, and in every case good has been the result—g[illegible] the [illegible], good to the sport, which is thus raised from a merely loca[illegible] or fleeting "fad" into a national and dignified means of recreation.

"Uphold me
Father,
in my
loneliness
A little
longer!



Des. by Catharine Weed Barnes

Artotype, E. Bierstadt, N. Y.

ENOCH ARDEN.

Aid me,
give me strength
Not to tell her,
never to
let her
know."

THE AMERICAN

AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., OCTOBER, 1890. No. 10.

Our Illustration.

WE PRESENT this month the second of Miss Barnes' "Enoch Arden" illustrations, representing the return of Enoch after his long wanderings. The action of the picture takes place in the evening, thus greatly increasing the technical difficulties of arrangement and lighting. Miss Barnes has succeeded admirably in harmonizing the dark exterior with the bright interior, and we take pleasure in being able to present so excellent an example of serious, thoughtful work.

◆

A League of American Camerists.

By W. H. Burbank.

AMATEUR photography has been passing through the common course of development of all sports and recreations. First a chance enthusiast appears here and there; gradually his enthusiasm communicates itself to others in his neighborhood, then there comes the thought of organization, and finally a club is formed of kindred spirits to foster their chosen sport. Other similar clubs spring up, one by one, in other localities. The sport gains in the number of its adherents and in influence, and finally there comes a day when the idea of a larger organization to include all the smaller ones, as well as the unattached followers of the sport, seizes upon a few more enthusiastic than their fellows, and, like Banquo's ghost, "it will not down." The idea becomes a reality, and the sport has a national association, a league, devoted to its interests, pledged to aid its growth.

This is the history of the League of American Wheelmen, the American Canoe Association, the National Lawn-Tennis Association, and many others, and in every case good has been the result—good to the individual, good to the sport, which is thus raised from a merely local or fleeting "fad" into a national and dignified means of recreation.

There would seem to be nothing in amateur photography to remove it from the operation of this general law. On the contrary there is every reason why it should obey it. There is as much cameraderie about it as there can be in any other amusement; there is as much, if not more, to be gained for its followers by the founding of a general association or league, and at the present time there is a sufficiently large body of amateur photographers to make the prospect of the successful fruition of the scheme exceedingly promising. This is not the time, perhaps, to speak of all the benefits to be gained by such an organization, but having had such a scheme in mind for several years, I may be pardoned for speaking a word in its behalf now that better men have taken it in hand. To most, the first benefit that will occur is the opportunity it will give of an annual exhibition which shall be fairly representative of American amateur photography. This certainly is a strong argument in favor of the project, but it is one on which others are better qualified to write than I who have never exhibited a print.

Another evident benefit is that derived from the annual convention of the association, where carefully prepared papers on various interesting applications of the art would be presented by men known to be well qualified to speak *ex cathedrâ*. The value of such an annual meeting can hardly be overestimated. The American Association for the Advancement of Science has recently held its annual meeting at Indianapolis. At that meeting papers were presented by men eminent in their particular science, and these papers speak the last words of science. Is it too much to hope that a league of American camerists could do as much for photography as this dignified association is doing for science, that its utterances should come to be regarded as worth listening to? And can any one doubt that such a league, so managed, would raise our art above the level of a mere amusement into the position of a science worth pursuing for its own sake?

Think how many unsolved problems yet remain to tempt earnest seekers after photographic truth; think how much assistance in the solution of those problems would be given by a general organization, and then acknowledge that the time has come for a league of American camerists which shall take our art under its fostering care, and, it may be, found an Institute of Photography where the science might be taught as its merits deserve. In all these ways the best and highest interests of photography would be furthered by an association founded and managed in lines similar to those which I have briefly sketched, and the amateurs can do the work better than the professionals, for the simple reason that they have more time for it than the professionals, and also greater interest in the scientific development of the art as distinguished from the commercial.

By all means let us have a national association of amateur photographers, and let all who are interested in the scheme show their interest publicly.

Artistic Blue Prints.

THE end of the summer's wanderings, camera in hand, in field and forest has come, and, with negatives all developed, the amateur's thoughts turn to the vexed question of printing. In these salad days of photography he has a wide field of choice. For his own collection there are the albumen, platinum, and bromide papers, but these are rather expensive methods and hardly feasible for the large number of gift pictures which one likes to send to friends.

Here the blue print holds the field on the score of cheapness and, when properly done, for delicacy and beauty as well. For some years I have been in the habit of making up a large number of blue prints for holiday gifts. These have all been made directly on the cards, doing away with the trouble of trimming and mounting, and with the addition of a plate mark to give them a finish, they are all one could wish for the purpose for which they are used. Almost any good surface card-board answers well. I am in the habit of using two or three-ply bristol board, which seems to produce a richer blue than most other card-boards.

Any of the numerous formulas may be employed for sensitizing without much affecting the final result. My own formula is: Red prussiate of potash, sixty grains; water, one ounce; ammonio citrate of iron, one hundred grains; water, one ounce. The potash solution may be mixed in quantity, as it keeps well, but the iron solution should be mixed only as wanted for immediate use; the two solutions are mixed in equal parts immediately before using, and are applied to the cards with a Buckle's brush, which is nothing more than a piece of white cotton flannel, doubled and bent over the end of a strip of glass and held in place with a rubber band. The ribbed side of the flannel is the one to use. In default of this, a soft sponge may be used. The solution is evenly applied, care being taken to avoid streakiness by not having the brush too wet and by brushing lengthwise and across the cards. The sensitizing may be done in subdued daylight. The cards soon dry and are then ready for exposure.

As every one knows, the best negatives for blue prints are those which we call plucky. None of the iron processes take kindly to thin negatives, and it is well to bear this in mind when selecting the negatives from which to make blue prints. The cards should be somewhat larger than the negatives, in order to leave a liberal margin of white card around the print. I use eight by ten cards for all sizes up to the whole plate. The printing frames must be as large as the cards and provided with glass fronts. In order to protect the margins of the cards and insure their washing out white, masks of opaque paper, cut the same size as the cards and having a central opening the size of the print, are placed over the negatives which are laid in the center of the printing frames.

After printing, until the shadows are deeply bronzed, the cards are thoroughly washed in order to prevent subsequent yellowing of the whites. Before they are quite dry the plate mark is put in. For this purpose a sheet of hard card-board is cut slightly larger than the printed portion of the cards, sufficient to leave a good half-inch margin around the picture, and the corners are slightly rounded off. Thin sheet brass is better if much work is to be done, but the hard card-board answers fairly well. The proper position for the plate card is easily ascertained by laying a piece of glass of the same size over the picture and marking or scoring the two upper corners with an ivory paper-knife. The glass form is then removed and the plate card put in place. The print is then placed on a piece of thick felt, the plate card is covered with one or two thicknesses of blotting paper, and the whole put under a letter-copying press for a minute or two. When removed from the press the print will be found to be surrounded with a mark closely resembling the plate mark seen in copper-plate engravings. When dry the prints are ironed or run through a burnisher to straighten them.

A very good substitute for embossing may be given to the margins outside the plate mark by cutting out an opening corresponding in size to the plate card in a sheet of coarse sand-paper. After removing the plate card from the print, the sand-paper is carefully adjusted in place and the pressure is again applied, thus producing indentations in the margins of the cards which at times have a very pleasing effect.

Three or four of these prints, bound in a cover of water-color paper by punching a hole in the upper left-hand corner and tying with a bit of ribbon, make a very pleasing and inexpensive birthday remembrance for a friend and reflect no discredit on the taste of the maker.

There are many other charming applications of the idea, but they must wait for a subsequent paper for description.

W. H. B.

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Home-Made.

By F. E. Fairbanks.

I NOTICE in the last number of the *British Journal of Photography*, August 8th, a description of a proposed building which is to be erected by the Camera Club in London, and among other facilities to be provided is mentioned "a workshop, fitted with a table, cabinet maker's bench, and a complete set of tools." This will give me a start on a subject I have long thought of writing upon, viz., the convenience, especially to a photographic amateur, of "a handiness with tools."

We are all liable to have our desires raised by a description of a new piece of apparatus, advertised or otherwise, and if our bank account is low or small naturally, we either have to go without or do the next best thing, if you can, and oftentimes one can do it if they only set about it. I remember well my first 4 x 5 $10 outfit, with its Waterbury lens and one plate holder, and a great deal of pleasure I derived from it, too. My desires soon outgrew my one plate holder, and on inquiry I was told the price of extra holders was $3.60, which seemed to me a prohibitory tariff which had its natural effect in stimulating "home industry." I saw nothing very difficult in their construction, and on trial found myself in possession of five additional double plate holders, which gave me a fair supply of plates for a day's outing. Later, my desires having outgrown my 4 x 5 outfit, and having seen cameras of much better styles, remembering my experience with the plate holders, I started to make one. The result was a 5 x 8 reversible back camera with swing back, rising and falling front, and front focus, with six double plate holders, in which I could use either 5 x 8, 5 x 7, or 4 x 5 plates without kits. The only part on which I was compelled to call in outside aid was in the brass work, and had I a lathe that would have easily been done at home.

Being thus in possession of a camera at very little cash outlay, I then put my money into a good lens, a division of expense for which I was never sorry. This camera box, however, was a first attempt, and I soon saw where it was capable of improvement, both as to convenience and portability, and consequently it was replaced by another, which in turn has been sold and replaced by a third, which has two reversible backs, one for 5 x 7 and the other for 6½ x 8½ plate holders, and is much simplified in construction, but no better pictures can be taken with it than were possible with the one first made.

The above was not written for those who have at their command money to gratify all their desires in a photographic line, but for the benefit of those whose wants sometimes outrun their financial ability, and to suggest to some such a possible way out of some of their difficulties. To any one who can use a saw and plane, the construction of many pieces of apparatus will not only be convenient, but instructive and entertaining. Enlarging cameras, drop shutters, retouching desks, etc., etc., are within easy reach, while a chemical and a negative cupboard are very convenient, and go far toward gaining toleration from the housekeeping department.

Your attempts may not compare in looks with the productions of the Blair Camera Company, but are perhaps within your reach, while the others may be away beyond it, at least for the present; and after all, the results are what you are looking for, and that is not dependent on the polish on the outside of the camera, although a good workman will make as good a job of finish as he can as a matter of pride. Try and see what you can do.

One matter further and I am done. Carefully plan out what you wish to do beforehand, and if possible make working drawings, to scale. It simplifies your after work very materially.

Photographic Illustrations of Poems.

BY F. C. BEACH.

(Concluded.)

MR. BAKER, photographer at Columbus, Ohio, had his three pictures, 18 x 22 in size, mounted in a handsome oak frame with rope around edge, and a half of a boat with an oar and net in it fastened across the bottom of the frame. All of his pictures were single figure studies.

The first showed Enoch as a young man, standing on shore with one foot near the bow of his boat, strong and vigorous. His costume was not that of a rough fisherman, but was more genteel; for instance, instead of wearing heavy boots or shoes he had on light shoes with buckles, while on his head was a light turban-shaped cap. The pose was good, arrangement of the background and boat satisfactory, but the dress looked too stagey. The lines illustrated are:

> "A luckier or a bolder fisherman,
> A carefuller in peril, did not breathe
> For leagues along that breaker-beaten coast
> Than Enoch."

The second shows Enoch seated on the rocky coast of the island on which he was wrecked, roughly dressed, looking out to sea, very naturally posed. His appearance with white hair and beard was very much like Rip Van Winkle. He is supposed to be saying to himself:

> "A shipwrecked sailor waiting for a sail;
> No sail from day to day."

The third represents him as having returned home, where, after he has seen Annie, he settles down to work in a shop making nets for fishermen, since he is described as being handy at most any kind of work. He is in the shop at work. The lighting was very well arranged and the effect quite natural. The lines it illustrates are:

> "And he thought,
> 'After the Lord has called me she shall know;
> I wait His time,' and Enoch set himself,
> Scorning an alms, to work whereby to live.
> Almost to all things could he turn his hand.
> Cooper he was and carpenter, and wrought
> To make the boatmen fishing-nets."

Coming to the end of the alcove we notice the three beautifully taken pictures of Mr. George M. Hastings, of Boston, Mass., though we cannot say they tell as consecutive a story as some others. He was the successful prize winner.

His first illustrates the beginning of the poem, when Annie, Enoch, and Philip were playing on the beach under the cliff. A fishing-net is hung on one of the peaks of the cliff. One of the boys is lying down on the sand

and the other is playing with him. The effect of the water background was well arranged. The verses accompanying it were as follows:

> "Here on this beach a hundred years ago
> Three children of three houses, Annie Lee,
> The prettiest little damsel in the port,
> And Philip Ray, the miller's only son,
> And Enoch Arden, a rough sailor's lad
> Made orphan by a winter shipwreck, play'd
> Among the waste and lumber of the shore,
> Hard coils of cordage, and swarthy fishing-nets,
> Anchors of rusty fluke, and boats updrawn;
> And built their castles of dissolving sand
> To watch them overflow'd, or following up
> And flying the white breaker, daily left
> The little footprint daily washed away.
>
> A narrow cave in beneath the cliff;
> In this the children played at keeping house.
> Enoch was host one day, Philip the next,
> While Annie still was mistress; but at times
> Enoch would hold possession for a week:
> "This is my house and this my little wife."
> "Mine too," said Philip, "turn and turn about":
> When, if they quarrel'd, Enoch, stronger made,
> Was master; then would Philip, his blue eyes
> All flooded with the helpless wrath of tears,
> Shriek out, "I hate you, Enoch!" and at this
> The little wife would weep for company,
> And pray them not to quarrel for her sake,
> And say she would be a little wife to both."

His second was an interior of Annie's kitchen or living-room, and was beautifully done. The clock on the mantel-piece, the chimney, and the simple surroundings, all told the story very effectively. Annie was in the center leaning over an empty cradle with her head bowed, the picture of loneliness. The words of the poem aptly describe the scene:

> "But Annie seated with her grief,
> Fresh from the burial of her little one,
> Cared not to look on any human face,
> But turned her own toward the wall and wept."

His third, unlike any of the others of this kind, represented Enoch seated on a fallen tree in the midst of woods, supposed to be musing on the scene before him, having returned to his native land. He had been shipwrecked on an island for a number of years; the preceding verses also describe him as having white silvered hair and beard.

This scene does not show anything of the kind. He has gray hair but not the sign of a beard. The question was asked how he shaved himself after being shipwrecked, living alone so long without a razor. We understand the author's idea is that before Enoch went to see Annie, in order to present a neat appearance he must have stopped at a barber's shop and been shaved. Enoch's tattered clothes and all the surroundings harmonized. The detail in the woods and figure was excellent. The lines illustrated were:

"But Enoch yearn'd to see her face again;
'If I might look on her sweet face again
And know that she is happy.' So the thought
Haunted and harrass'd him, and drove him forth
At evening when the dull November day
Was growing duller twilight, to the hill.
There he sat down gazing on all below;
There did a thousand memories roll upon him,
Unspeakable for sadness."

Mr. Stein, of Milwaukee, Wis., who contributed several genre pictures, also tried his hand at "Enoch Arden."

His first picture showed Annie and Enoch seated under trees. The positions were stiff and gallery-like. It illustrated the words:

"Sitting hand in hand."

Enoch is shipwrecked, and is illustrated in the second picture standing on a rock in Rip Van Winkle dress, with staff in hand, looking out to sea. He says:

"No sail from day to day."

Returning home, the third picture shows him approaching Annie's cottage, with a slouch hat on, stealing towards the window, thief-like, to look in. One hand grasps the branch of the tree. He looks too large for the trees. The scene is effective, but the perspective is out of proportion. It is supposed to illustrate the following lines:

"Now when the dead man come to life beheld
His wife his wife no more, and saw the babe,
Hers, yet not his, upon the father's knee,
And all the warmth, the peace, the happiness,
And his own children tall and beautiful,
And him, that other, reigning in his place,
Lord of his rights and of his children's love,—
Then he, tho' Miriam Lane had told him all,
Because things seen are mightier than things heard,
Stagger'd and shook, holding the branch, and fear'd
To send abroad a shrill and terrible cry,
Which in one moment, like a blast of doom,
Would shatter all the happiness of the hearth.

He therefore, turning softly like a thief,
Lest the harsh shingle should grate under foot,
And feeling all along the garden-wall
Lest he should swoon and tumble and be found,
Crept close to the gate, and open'd it and closed,
As lightly as a sick man's chamber-door,
Behind him, and came out upon the waste."

Mr. H. McMichael, of Buffalo, N. Y., takes the last part of the poem to illustrate.

His first represents Enoch, after having been shipwrecked, sitting on some rocks, resting his elbow on the same with his hand against his face. It is described in the poem thus:

"On those two deaths he read God's warning, 'wait.'"

His second showed him sitting in bed with white hair and beard, propped up with pillows, his left hand uplifted, nurse sitting beside him with clasped hands. He says:

> "Woman, disturb me not, not now at the last,
> But let me hold my purpose till I die."

The picture was massive and effective. The only peculiarity was, the background made it appear that he died in a palace instead of a poor woman's home.

His third was identical with the second except as to position. Enoch has fallen back dead with his head partly to one side, while the nurse's head is buried in her hands. The scene is well described in these words:

> "So past the strong heroic soul away."

Mr. McMichael's work was well and carefully done.

The grand prize awarded was a beautiful bronze group especially made in Paris.

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One Day of a Vacation Abroad.

By Horace Wyman.

Old English Cottage.

ON a pleasant morning in June, with two friends and a Kodak camera, I left London on an early train for an excursion into Hertfordshire, to make some genealogical researches. Our information as to the precise location of our objective point, viz., the village of West Mill, was rather meagre, but taking a train for the town of Ware, about thirty miles from London on the Great Eastern Railway, where we expected to obtain further information, we were soon on the way, passing through a portion of England devoted mostly to agricultural pursuits.

On our way we passed the town of Edmonton, made famous by the poet Cowper in his diverting description of the horseback ride of John Gilpin from London, on the anniversary of his wedding day, to meet his family at Edmonton for a day's outing, but his unmanageable steed continued on with him past Edmonton to Ware. Our iron horse proved more manageable, however, as we duly stopped at the town.

Upon our arrival at the station at Ware we learned that a small village called West Mill was about three miles out, but that the parish of West Mill was ten miles farther on. Uncertain as to which place was the one we sought, we entered an inn and engaged a wagonette for a drive through the country, and while waiting for it to be brought around, learned that Dick Turpin, the noted highwayman of olden times, visited this inn and tested its liquors while on one of his rides through the country on his mare Black Bess. The view from the inn door, probably, in his time did not embrace the great malt houses and canal for the transportation of the malt to market, as is now seen there.

WEST MILL.

Our party mounting the wagonette upon its arrival, myself as chief photographer taking a seat with the driver, we set out for the village of West Mill. Upon reaching the hamlet a halt was made and we ascertained the place to be a village of only a house or two and a mill for grinding grain for the neighboring country. Finding this was not our place, we decided to drive the ten miles to the other village. Before starting, however, I secured the view of the mill which gives the place its name, it making a pretty picture as seen from the road, with its race-way for the water and overhanging vines on the stone-work.

Leaving the main road here we entered a lane, passing a string of gypsy wagons with their occupants on the move to Wade's Mill, near by on the main road. Reaching this place we again stopped for information, the gypsys meanwhile filing into the place before we started on. A view of the mill on the stream running through here was taken, this also being a grain mill, but not in operation at the time. As the water in the race-way was motionless, it detracted considerably from the expression which the view would otherwise have. After securing this view we again were on the way, ascending a long hill of moderate elevation, with some picturesque cottages on the roadside, their thatched roofs and walls covered with rose bushes in full bloom, looking very English, their small-sized diamond-paned windows denoting their antiquity. Passing these for some distance we came to a monument on the roadside, between the walk and road-way, the inscription upon it stating that it was erected upon the spot where Thomas Clarkson was seated when he resolved to devote his life to the emancipation of the slaves in the British colonies. Stopping here I secured a view of the monument with our party arranged in proper attitudes for the occasion. We then passed on and soon

GYPSY WAGONS.

reached the top of the hill, coming to High Cross with its church, forming a pleasing picture as we passed by. A short distance on and we reached Collier's End, a village rejoicing in an inn named the "Red, White, and Blue," which seemed somewhat American, we thought, and then on to another village called Puckeridge, where a road diverged for West Mill. Taking this, we were joined by a young miss and her brother in a pony-cart, who were desirous of having a test of speed with us, their cart being drawn by a diminutive animal whose relative size was greatly decreased when taken in the Kodak just after passing our carriage.

WADE'S MILL.

We soon came in sight of the parish of West Mill, located in the valley below, and turning off from the main road descended to the village and commenced our investigations. The parish church, Saint Mary's, attracted our attention when we learned it was the depository of the records from which we were seeking to obtain information. We found, however, that these were under lock and key and were in the keeping of the rector. So, mounting our carriage again, we drove to the rectory, about a mile distant, and a very pretty vine-covered building with well-kept grounds. Pulling up at the door and inquiring of the portly personage who answered our call, we found to our dismay that the rector was in Wales for the season, and nothing could be accomplished without his presence. After taking a view of the rectory and the party in the wagonette at the door, we returned to the church, on our way back taking some interesting views of characteristic cottages of olden times, with thatched roofs nearly two feet thick, and walls pierced with barely a window or two to light the interior, they going back probably to the time when window-glass was taxed as a luxury.

THE RECTORY.

THE COTTAGE.

Upon reaching the church we found an old woman custodian who showed us the interior of the edifice, and connected with it the rector's room. Opening out of this room was the closed door within which were deposited the records of the parish. As we stood before it, a sad feeling came over us as we thought that what we sought was so near and yet so far away. Our thoughts went back two hundred and fifty years to the time when two young men, not twenty years of age, left their home in this parish to seek their fortunes in the New World. The church we were in was an old edifice then. The paved flooring, the walls and the curiously ornamented windows, were built nearly three hundred years before that time. The flagstones upon which we stood had been trodden by their feet many times, doubtless, and it was with unfeigned regret that we turned away, knowing that we could not at that time learn more concerning their lives in that village. However, making the best of the situation, we took several views of the edifice, with its tracery-ornamented windows, its massive tower with an ancient ivy clinging on its walls, and the church-yard surrounding it, dotted here and there with grave-stones.

SAINT MARY'S, WEST MILL.

We learned that the church was erected about the year 1300 A.D., and, as described in history, "consists of a square embattled tower, a nave, and a chancel." The arched doorway to the tower interested us, decorated as it was with mouldings and sculptured figures, its oaken door discolored by time and swung upon wrought hinges of curious workmanship. After securing a view of this door and archway, and bestowing the customary fee to the woman for showing the church, we wandered about the church-yard awhile examining the inscriptions upon the stones. Then, dismissing our carriage, we turned towards the railway station, passing an interesting hour, before the arrival of the train, on a hill-side near by listening to the larks with which the field abounded.

TOWER DOOR.

The time passed too quickly, as we heard the approaching train, and regretting that our Kodak could not secure on its film the loveliness of the past hour, we turned to the station, and entering the train were in a short time again at our lodgings in London. Although failing to obtain the information for which the trip was planned, yet we had one of the most enjoyable excursions imaginable. The memory of it, which the Kodak helped to retain, will long remain.

WOMAN'S WORK.

EDITED BY MISS CATHERINE WEED BARNES.

The Question of Expense.

BY MISS CATHERINE WEED BARNES.

PART I.

HOW many people know much, if anything, of the expense required to manage an ordinary portrait studio? Does the average sitter consider that a dozen sittings cost the operator any more than one? I speak not only to the amateur, but to the general public, in saying that there is much unconscious ignorance on these and other points in photography which a few words may serve to make clearer. I am often asked if it is not possible to clean an exposed plate so as to use it again, and as regards proofs or prints, they are usually considered as of little, if any, value. It seems to be a positive revelation to one who is not familiar with photographic processes to be told that every sheet of paper must be silvered and requires pure gold to tone and render the picture permanent—that simple printing will not do this. One very important point is that the ordinary sheet of silvered paper is 18 x 22 inches. Calculate how many cabinet pictures can be cut from it, and also how much has to be wasted if larger sizes are desired; unless, indeed, one follows the example of some photographers and cuts the wrong way of the paper, making the long faces broad and the latter still broader. This simple explanation will account for many so-called "poor" pictures. It is usual with professionals to silver every day what paper they estimate will be needed, and if any is left over or there is a sudden change in the weather or long-continued dark days, there is a deficit when the books are reckoned up. The general public finds it also hard to understand why, if a negative can be made in stormy weather, it is impossible to make albumen prints.

Many amateurs are deterred from any but the simplest work because some one else has a finer lens, and "of course, there is no use in my trying to do such work," is the ready excuse for careless manipulation, leaving the lens uncovered, wiping the glass with any cloth that happens to be at hand, working with soiled graduates or trays and, generally, neglecting the absolutely important rules of neatness and order. Lenses are made now at prices to suit any purse, but it is well to make up one's mind first what kind of work is to be done. It is utterly impossible to make ordinary portraits, landscapes, groups, large heads, interiors, and snap-shots with the same lens. I have done quite good work with a 4 x 5 lens (camera and lens costing $20), but only outdoors and in the best of light. Do not, in such cases, ask for absolutely sharp outlines clear to the corners or a soft, well-lit face, with everything in focus. Of course an expensive lens is best for the best work, else why should men spend so much care in devising them; but it is not necessary that an amateur should attempt to cover the whole photographic field. It is much better to select some particular branch and learn to do that as well as possible. The cheapest work is that done with a small view lens and using such cameras as the Kodak, Turnover, P. D. Q., etc. I do not think the film rolls have really helped the art side of photography, for with so many chances to work quickly one is tempted to make many useless exposures and not take time to thoroughly study the view before exposure. I was in California once with a friend who had a Kodak camera and he must have made six or seven pictures to my one, but his were two and one-half inches and mine 5 x 7 in size. His camera had cost $25, and mine, an Anthony Climax, nearly $140. His was always ready and no weight, while mine was heavy and required much trouble in filling holders and packing exposed plates. I had used a R. R. Dallmeyer lens (6½ x 8½), and though the results were smaller in quantity I was not ashamed of them in quality.

The lens is the first thing to be considered as regards expense, for the camera and tripod can be home-made. So, where expense is an important consideration, get as good a lens as you can afford and fill up the deficiencies in your outfit with brains. My first outfit (5 x 8) cost less than $30, but as my great ambition was interior work, I soon disposed of it for an 8 x 10 camera and a fine wide-angle lens, of course at a much greater expense, the latter costing over sixty dollars. As this worked more slowly than my long focus lens, it was not possible to use it for portraits, which was my next temptation. So, a hundred-dollar portrait lens was bought and did very well, using only side-light, but added experience made me critical and then my attic studio was built. Before this, an ordinary view camera on a tripod had been used for portraits, but with the studio a regular portrait camera and stand were needed. Then, as ambition grew, a lens for large heads was required which cost $164, and all sorts of accessories. The room being short and full-length figures being called for, a wide-angle group lens joined the collection. This, being expected to do fine work, was expensive, costing nearly ninety dollars, and when I found certain work could not be done with the lenses on hand I looked for what would do it. I do not believe in straining a lens and would prefer buying one rather larger than is actually required. But lenses, and good ones, too, are becoming more reasonable in price, and I have one now, a W. A. Euryscope (Voigtländer) covering a 5 x 7 plate with full opening and an 8 x 10 with the smallest stop. Certain kinds of lenses do special work better than others, and I do not believe in pinning one's faith to any one make, although confessing my preference for Voigtländer's and Dallmeyer's for portraits and interiors.

There are several good ones for instantaneous work, but I have had best success with the Dallmeyer and Hermagis. It is curious that one person will succeed where another fails, with the same lens or developer. Try for yourself and decide which is your "particular wanity." If possible, test your lens before buying one; no two, even of the same make, are exactly alike, no matter who tells you so. But the main point settled, then comes the camera, and early in camera work I learned one very useful "point." If you have more than one camera, screw your flange on the front-board of the smallest and slip that board, when necessary to use a larger plate, tightly into a frame on the larger front-board. By this device one lens can be used on several cameras. One reason for using high-priced lenses is, that often several of the same make fit into the same flange, rendering only one front-board necessary. Tourists will appreciate this necessity for traveling close-reefed. In my reducing camera I use for 8 x 10 negatives a wide-angled Dallmeyer and for 11 by 14's a R. S. Ross lens. In the former case put the lens inside the camera and in the latter put it in the sliding front-board. I have a 5 x 7 Universal camera and usually carry a 6½ x 8½ Dallmeyer R. R. lens with Prosch shutter, and into the same flange fits a 10 x 12 Dallmeyer W. A. With this outfit it is possible with separate front-boards to carry a 5 x 7 Dallmeyer W. A. and also a Voigtländer W. A. Euryscope, which has a longer focus than my small Dallmeyer; but circumstances govern cases, and it is not generally necessary to take four lenses on short trips. This fitting one front-board on another I utilize for the studio, for interiors, and landscapes. It is especially useful when using a drop shutter, and I have the Green, Low, and Prosch shutters; the first two are not expensive and are quick enough for the studio, but not for view work. The Prosch is the most expensive and the quickest for closely accurate work.

As regards cameras, they can cost comparatively nothing or a great deal. For portraits they should be heavy and rigid, with sliding front, double swing back, and every other movement that can be devised to secure uncertain sitters. Remember, however, that this means added expense. The stand should be firm and easily controlled. My two portrait cameras cost about one hundred dollars, and my stands, for there are two, cost respectively $15 and $25. Tripods are comparatively inexpensive, but should be thoroughly reliable, and one can well bear an extra weight in outdoor work if sure they will not suddenly give way and bring wreck and ruin in their path. In truth there is too much demand nowadays for light outfits, while strength and solidity are being sacrificed. People want a good picture, but without its costing them much expense, time, or trouble, and they will not get it.

In studio work one needs backgrounds and various other articles, but the expense of these is limited only by the condition of the operator's purse. Those who have studios are always altering them, as I can testify, and the more one learns, the more chances offer themselves for such alterations.

The landscape worker is spared this and his expenses must be in the line of plates, lenses, and chemicals. Plates cost all sorts of prices, increasing of course with the larger sizes. There is not much difference between those of a size. Cut films are somewhat more costly, but have many advantages, more so, I believe, than the film rolls, while 4 x 5 plates cost about sixty-five cents per dozen; 8 x 10's, $2.40; 11 x 14's, $5, and so upwards. Considering the possible risk of defective plates, uneasy sitters, etc., plates are quite a heavy item of expense, especially with weak negatives, when to the cost of development is added that of intensification. With portraits comes the expense of retouching, which ought only to be done by an experienced worker, and this requires a long and severe apprenticeship, besides good eyesight, a steady hand, and endless patience. It should not be attempted by the average amateur, and never done on interiors or landscapes unless under very exceptional circumstances.

But the negative becomes such only by development with certain chemicals, and their names and combinations are legion. The simpler formulas are the best, unless you wish to show what you *can* do, and if you get a good one do not change quickly. Pyro costs about six dollars per pound, and both carbonate and sulphite of soda are cheap. There is no better developer for portraits than this combination, while for lantern-slides I use eikonogen, which is growing cheaper, in place of pyro with, generally, sulphite of soda and bromide of potassium. The new acid sulphite is excellent for keeping the pyro bath clear and can easily be made by Lanier's formula. T. C. Roche uses it in the pyro developer, but I have not tried that. A little sulphuric acid in the alum bath is also a cheap and easy way to clear negatives and slides. It is claimed one should not use acid with eiko, but I have no trouble with it.

I feel that this article has only touched on some of the leading points of this subject and I must defer further consideration of it to a future number of this magazine. To properly treat this great question of expense would require a volume.

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A Home Photographic Studio.

PHOTOGRAPHY makes a strong appeal to woman, for the reason that she may study and practice it in her own home, in the very corner of her room; yet it does not interfere with daily duties and pleasures by demanding of its disciples long, tedious courses of study and hours of unremitting practice to gain more facility in the use of the camera's parts. Photography appeals directly to a woman's intelligence, demands constant exercise of her powers of judgment, giving her in return rapid and beautiful reward. The photographic genius need not be born with instinct ready to ripen into perfection of skill, but in this day she can easily make herself one, and in the highest degree expert. More than all, it is an art within the reach of women of modest means; no expenses are entailed beyond the purchase of a good outfit, always to be had for a moderate sum. The studio need occupy but a corner of a family drawing-room or one's own private apartment, while for a dark-room an empty, unused closet often answers. Once she is given the camera, with a dark-room and a corner studio, any woman can begin to make pictures; views, portraits, and exteriors may be experimented with, and, as is often the result, success with the first small camera inspires the amateur to force her way into broader fields with more complete and intricate equipment.—*From " Women and their Cameras," by* MARGARET BISLAND, *in Outing for October.*

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THE

AMERICAN AMATEUR PHOTOGRAPHER.

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EDITORIAL COMMENT.

Miss Barnes' Portrait in the Photographic Times.—In reply to numerous inquiries, we desire to state that the portrait of Miss Barnes, recently published in the *Photographic Times*, was reproduced from a negative made on a Newcomb & Owen plate, with the new wide-angle Voigtländer portrait lens, in her new Ducher portable studio.

Hints on Portraiture.—Our most interesting contemporary, the *American Journal of Photography*, in its August and September issue, prints two valuable papers, "Success in Portraits," by Mr. Xanthus Smith, the leading points of which we briefly summarize. The first principle is simplicity in arrangement and effect. "The mind should be impressed, not distracted, and a work of art to be impressive must tell its story simply and directly."

In the matter of lighting the principle is correctly stated, that it must extend above the level of the head and fall upon the sitter, as nearly as possible at an angle of forty-five degrees. It matters little whether the amount of light be great or small so long as the above condition is complied with.

The background should be quiet that it may not distract attention from the subject. A piece of quiet gray drapery answers well for a simple background.

Posing is a matter largely conditioned by the character of the sitter and the tact of the operator. Stiffness and lolling are both to be avoided. Direct front views are to be avoided. The head should be slightly turned away from the camera.

"Light and shadow is the soul of art, and as photography expresses form by light and shadow only, the sooner the photographer makes himself acquainted with its mysteries and beauties the better." . . . "Posing heads so that the entire face is in shadow, or in half shadow, and relieving off a white background, or lighting the face sharply or harshly on one edge, or having a glare of diffused light over the face, are mere tricks, and however much they may captivate on the instant, they will never wear well."

In the matter of plates Mr. Smith, wisely we think, recommends the most rapid to be had, both as shortening the time necessary to a full exposure and producing a desirable softness of the contrasts of the lights and shadows, which is the effect of a diffused light. By using rapid plates we are enabled to pose the sitter in a quiet, subdued light which gives breadth and softness.

A full exposure is recommended in order to secure all the delicate half tones. The developer should be weak rather than strong, and development should proceed slowly and be well prolonged; the only clear places, if there are any, should be the points of most intense shadows.

Taken all in all, Mr. Smith has given us a thoughtful and valuable paper on portraiture.

Entomological Photography.—In the September number of the same journal, the associate editor has a suggestive paper on the value of a knowledge of photography to the entomologist, and his paper is illustrated by two superb cuts made by the Ives process. We confess that we had not supposed that any half-tone process could render this difficult class of subjects with so much delicacy and detail. Heretofore the phototype process has been most in use for this class of work, and we are glad to know that the cheaper process is suitable for the purpose.

Sachse's Developer for Orthochromatic Plates:

Sulphite of soda, ...	5 drams.
Eikonogen, ...	45 grains.
Hydrochinon, ...	15 grains.
Distilled water, ...	8 ounces.

Heat the water to the boiling point and add the sulphite. When dissolved, add the eikonogen, then the hydrochinon. Shake until thoroughly dissolved. Allow the solution to stand for ten hours and add ninety grains of carbonate of potash. For use, take equal parts of this solution and water. The picture should come up quickly and perfect in details, with full density in the shadows.—*American Journal of Photography.*

Pizzeghelli's Developer for Slides and Transparencies.—A.—Dissolve 5 drams of citric acid in 5 drams of water and neutralize with ammonia. Should too much ammonia be added, the excess may be driven off by gentle heat. Then add 3⅓ drams of citric acid and make the solution up to 4¾ ounces. B.—A 1 to 3 ferrous sulphate solution slightly acidulated with sulphuric acid. C.—A 1 to 30 chloride of soda solution. This is a powerful restrainer and should be used with care. Developer:

A,	10 parts.
B,	5 parts.
C,	1 part.

A larger proportion of ferrous sulphate retards the development. Softer and less intense effects are produced by diluting the developer. Gallic acid acts as an accelerator and produces sepia tones. Two and one-half parts of a one per cent. gallic acid solution is recommended.—*Reveu Photographique.*

Printing from Negatives of Strong Contrast.—One way I have used, and it is very successful, is to gum a piece of tissue paper over the back of the negative at the edges. Over the dense portions the paper is cut away, and over the clear parts it is worked on with a lead-pencil. In very extreme cases I paint on the tissue paper with some transparent non-actinic color, such as burnt sienna, instead of the lead-pencil. Another way, also very good, is by means of local reduction. This must be done before the negative is varnished, or else the film of varnish must be removed with methylated spirit. Any good reducer will do, but I have been most successful with two, and it must be applied with a small camel-hair pencil. The first is ferric chloride. A solution of this, containing fifteen grains to the ounce of water, is painted over the dense parts with the brush; the negative is then swilled and placed in the hypo bath. If the reduction is not sufficient, the operations are repeated till it is. The second is a mechanical reducer. A piece of soft chamois leather or rag is stretched over the tip of the finger; it is then moistened with methylated spirit, and the film gently rubbed over the dense parts with it. The outer surface of the gelatine is rubbed away, carrying the silver with it.—*Ag. Br., in Photography.*

Composite Heliochromy.—Our thanks are due to Mr. Frederick E. Ives for a copy of the patent specifications of a new process of heliochromy of his invention. Unfortunately we have not space to print the specifications in full, and must therefore content ourselves with a *résumé* of the leading principles upon which Mr. Ives' method is based. Mr. Ives adopts the modern theory of light, which distinguishes between primary spectrum colors and primary color sensations; the latter being three in number, red, green, and blue, while the former consist of thousands of different primary rays, each of which excites one or more of the three primary color sensations in definite degrees and proportions.

Mr. Ives' method consists in obtaining from each object to be reproduced three photographs, each representing, by its light and shade, the degree to which light, coming from different portions of the subject, excites a single primary color sensation in the eye. These three photographs are then projected simultaneously upon a screen by light which excites only the primary color sensation which it represents, and so superimposed and combined as to appear as one picture, which reproduces exactly the appearance of the object photographed, both as to light, shade, and color.

The first of the three photographs is taken chiefly by the orange spectrum rays to represent the effect upon the green sensation; the second chiefly by the blue rays to represent the effect upon the blue sensation, and the third chiefly by the greenish-yellow rays to represent the effect upon the green sensation. These photographs are produced by suitable modifications of the well-known orthochromatic methods.

In order to produce a screen picture from the photographs, a lantern is used in which there are three separate lights and three sets of lenses, so adjusted as to superimpose the three images on the screen, the slide representing the red sensation being projected by red light, the one representing the green by green light, and that of the blue sensation by blue-violet light, the result being a representation of the image in its natural colors and values.

As soon as the new method becomes generally known, what "realistic" lantern-nights we shall have!

The Summer Schools of Photography.—The two American summer schools of photography, the Chautauqua, presided over by Dr. Charles Ehrmann, and the Lake Bluff, under the fostering care of Dr. John Nichols, have just closed successful seasons. During the past year the Chautauqua School has enrolled one hundred and fifty-seven students on its books, of whom eighty-nine were amateurs, and the instruction has been both theoretical and practical. No statistics are given of the Lake Bluff School, but the *Beacon* informs us that it was well attended. In all of this we rejoice. We hope to see the day when there shall be a Photographic Institute and a recognized position for photography in every college course, and until that day we gladly welcome every effort to impart a thorough knowledge of our art.

Photographic Libraries.—Every department of work has a literature of its own which may not safely be neglected by those who wish to gain a thorough knowledge of the subject. This is eminently true of photography, which now has a literature of quite respectable proportions.

Every worker with the camera should own a well-stocked photographic book-shelf. But in order that his selection of books may be really helpful and representative, he must exercise discretion in his choice of books.

Many of the recent additions to the literature of photography are valuable, and many are comparatively worthless.

A dozen titles will include all the books that are essential to a completely appointed photographic working library. A long acquaintance with and close study of photographic literature has given us some practical knowledge of the contents of most of the publications of recent years. This knowledge we shall be pleased to place at the disposal of all who may wish for aid in their selection of books. We shall be happy to advise intending purchasers regarding books best suited to their special needs, and such advice will be based on the intrinsic merits of the books themselves.

Indexing Photographic Literature.—In these days of a rapidly increasing photographic literature, a systematized index is a necessity to him who would have his photographic store of knowledge within easy reach. It is not always easy to lay one's hand on this or that article which was casually glanced over the other day, but which to-day is just what one wants if he can only find it. Even the most modest photographic library is the better at command through an index. Some hints from one who is fortunate in the possession of a photographic library of over two hundred volumes, and to whom some thirty periodicals bring the photographic news of the day, may be of value.

The first thing is to purchase a small blank book indexed from beginning to end. In this are entered the titles of all the leading articles in the periodicals as they come to hand, the chapter headings of all new books and references to formulas, wrinkles, etc. When this book is full, its contents are transferred by subjects to a larger Index Rerum, where they form a condensed *résumé* of photographic matters. In this way the systematic and thorough study of any subject is simplified, and anxious inquirers are referred to competent authorities.

Not every amateur is willing to go to all this trouble to "bank" his knowledge, but those who do will never regret it, and the value of it is shown in Dr. Janeway's Index Rerum now running in these pages, which, but for the Doctor's painstaking care and love for everything pertaining to photography, had never been.

Photographing Shipping.—The amateur who seeks to reproduce the fleeting homes of those who "go down to the deep waters" will do well to study Zogbaum's spirited illustrations accompanying his breezy "With Uncle Sam's Blue Jackets Afloat," now running in *Scribner's*.

Here we have ships and incidents aboard ship pictured forth by one who has the artist eye, and while not all of them are possible to him who uses the camera instead of the pencil, many of them come well within the possibilities of the camera. Take, for instance, the cut of the ship on page 275 in the September number. Here is as effective a bit of marine work as we have seen for many a day, and one not impossible to the camera under judicious management. The ship is running free and quartering to the sun, which is shining on the starboard quarter. All that side nearest the observer is in shadow, made all the more intense by the brightly illuminated cloud masses behind. We do not remember to have seen a single photograph of a vessel under the same conditions of lighting, except one we ourselves once made as a moonlight study, but the thing is not difficult. Of course the lens must be pointed into the sun's eye to obtain the effect, and this introduces an element of possible failure. Care must be taken to shade the lens, and if possible to make the exposure when the sun is obscured by a passing cloud, and all this means close watching for days, perhaps, at some favorable spot for just the right conditions of light and subject. But "all things come round to him who knows how to wait," and the camerist who has not infinite patience is but a sorry lover of photography.

The National Association of Amateur Photographers.—We have the best of reasons for believing that the time is not far distant when this association will be an accomplished fact. The preliminary work is in good hands, and if the Syracuse Club is well supported in its efforts, we shall soon have a National Association of Amateurs. One of the essential elements of the successful working of such an association is a large membership. We have written somewhat at length in another place of what we conceive to be the legitimate purposes of the association, and we shall probably return to the matter next month.

The preliminary work will be greatly aided by the knowledge of the support the movement is likely to receive from amateurs at large. The Syracuse Club has sent circulars to all camera clubs, and we venture to ask those of our readers who think favorably of the project to send us a postal card to that effect in order that we may be able to form an idea of the probable support the projectors of the movement are likely to receive. We would also be pleased to receive suggestions, for publication or not, regarding the details of organization. "In a multitude of counselors there is sometimes wisdom."

The modern magazine may be taken as embodying the best literature of the world, as the magazine editor pays the highest prices to novelists, scientists, statesmen, soldiers, and even kings and princes, for the best they can furnish in the literary line. The well-edited magazine becomes an educating influence in the family circle, whose importance cannot be overestimated; and we consider that we are doing our readers a positive benefit if we are instrumental in placing such a publication within their reach. The special arrangement which we have made with the *Cosmopolitan* presents very unusual inducements. That magazine, although only in the tenth month under its new management, is already recognized as one of the most interesting publications of the day. It is seeking subscribers everywhere and obtaining them. The proprietors believe that the *Cosmopolitan* has only to be examined to secure a permanent subscriber. That is why we are enabled to make, if the offer is accepted before January next, such a very low rate, by which our readers can obtain the *Cosmopolitan* for little more than the cost of this journal alone. Just think of what the combination means! You obtain this journal at a trifle more than the regular price, and have thrown in a magazine which gives you, in a year, 1536 pages of reading matter by the ablest writers of the world, including over 1300 pages of illustrations that are unsurpassed in point of interest and execution. Will it not pay you to send a subscription to this office for the AMERICAN AMATEUR PHOTOGRAPHER and the *Cosmopolitan*, immediately? Remember, only $3.00 for the two.

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Photographs at the Washington Convention.

In reviewing the exhibit of photographs at the Washington convention it will be our purpose to briefly comment on the merits or defects of the exhibits as they appeared to us at the time. A majority of the frames were hung with their edges towards the light, making it difficult to easily see them.

Beginning at the rear end of the hall with the foreign exhibits, we notice very large platinotype prints of standing figures by Lafayette, of Dublin, Ireland, well posed and beautifully worked up. He had silver prints also of the same subject, but the platinotype appeared to be more artistic. Gottheil & Sohn, Konigsberg, Germany, sent a number of cabinets and photo-crayons of average merit. Hanna, of Auckland, New Zealand, contributed several excellent glacé cabinet portraits. Nursoo Dewjee Poopal, of Ahmednuggur, India, sent very clear and excellent photographs, mostly of groups of natives. Eddy Brothers, of London, Canada, had some fairly good portraits. All of the foreign exhibits were confined mostly to portraits. In an alcove adjoining these was the comprehensive exhibit of marine views by the Allen & Rowell Company of Boston, Mass. They had some very effective and interesting yachting pictures, several being printed in different tints in carbon. There were no other exhibitors in this class.

Heimburger & Sons, of New Albany, Indiana, sent a number of well-executed road studies and a few interiors. In Albert LeBreton's exhibit (of Washington, D. C.,) was a very pretty photograph of a "Spanish Lady Going to Mass." The Astronomical Observatory of Harvard College contributed some fairly good work, showing photographs of planets and of the spectrum. Those of the latter were not equal to Prof. Rowland's exhibit at Philadelphia.

In place of Barker's well-known views of Niagara Falls were some very large direct photos (18x22), having in them natural clouds, excellently done by J. Zybach, of Niagara Falls, Ontario, Canada. Stimson, of Appleton, Wisconsin, had a number of 8x10 portraits showing good work. George H. Van Norman, of Waltham, Mass., exhibited some novel photographs. A large one was a standing figure of a lady having a camera on her head and her dress covered with photographs, designed to show how thoroughly photographic she was. There were also some very clever double photographs of one person in two different positions and different styles of dress. His work showed considerable originality. Baker, of Columbus, Ohio, had a fine exhibit of large heads made direct from life, and a perfect picture photograph, entitled "Beatrice Cenci," intended to represent the lines in Shelley's poem:

"Cut off from the only world I know,
From light and life and love, in youth's sweet prime."

Beatrice is confined in the prison clad in white, which, in connection with the dark walls for a background and the light streaming in through a window, makes an effect that is highly artistic and realistic. The figure was also most appropriately lighted. Mr. Baker received a diploma for the best arranged exhibit.

Bowersox, of Dayton, Ohio, sent a number of cabinet and card portraits of fair merit. He also had some large portraits framed in very poor taste. We noticed specimens (mostly card and cabinet photos) by the Columbus Photograph Enameling Company, showing the high gloss they are able to obtain. There were also some very good specimen aristotype photographs made on the Gilbert aristotype paper. Theodore Henig, of Dayton, Ohio, had an exhibit of cabinet photographs of fair merit and a few large heads. W. Stuber & Brother, Louisville, Ky., sent some excellent cabinet photographs of children. The work as a whole was well done. E. T. Billings' (of Racine, Wisconsin) exhibit included single portraits and a few groups, all very cleverly done. Rothengatter & Dillon, of Philadelphia, Penn., had six 11 x 14 theatrical flash-light photographs which were very good, and other portrait photographs of excellent quality.

B. LaMarsh, of Kenosha, Wis., sent a number of cabinet photographs and a few large heads, made direct, of fair quality. One, a group of ladies, was technically beautifully done. Dana, of New York, had a fine display of large portraits of ladies, 18 x 22 in size. In many cases the posing and lighting of the figures was very artistically arranged. In McCrary & Branson's exhibit were two large heads of ladies, in color and tone very soft and clear. The top front hair was a little too snowy. The work as a whole was of very good quality. A. H. Plecker, of Lynchburg, Va., had several large of heads fair quality, but nothing specially noteworthy. In Mr. Hardy's (of Boston) twelve studies of Greek Mythology were some that showed especially good posing and lighting. Their statue-like effect was remarkable. G. W. Motes, of Atlanta, Ga., showed excellent work, all the pictures being very large (18 x 22). His figure of a lady in Greek costume was beautifully soft and technically good. J. Inglis, of Chicago, Ill., sent a number of 18 x 22 large heads, not for competition. They were fairly done.

Mr. Hall, of Buffalo, New York, had a number of cabinet photographs of standing figures and large heads of ordinary merit. Landy, of Cincinnati, O., exhibited splendid large heads beautifully shaded and artistically retouched. One military portrait was particularly good. Mr. Scott, of Washington, D. C., had some excellent large portraits.

In Alcove 1, near the entrance from the lecture-room, was located a series of genre pictures in competition for a special medal. Stein, of Milwaukee, showed six large 18 x 22 pictures. His interior of a blacksmith shop with the blacksmith at work in the act of making a horseshoe, was beautifully lighted and naturally posed. The title was, "A man's a man for a' that." Another picture of a hay field near an inlet of water, with a woman sitting in the center of the field, entitled "Rest," was also very effectively arranged.

Rosch, of St. Louis, had three pictures having a white background, entitled "The Serenade," "Little Bob's Fish Story," "Music Hath Charms," all illustrating children in novel positions. They were very odd, interesting, and naturally posed. His most picturesque picture illustrated Annie, in "Enoch Arden," standing on the shore looking out towards the ocean with her back towards the camera. What was particularly noticeable was the natural trend and waving of the dress as if the wind was blowing inward from the water. This effect appears to have been obtained in the gallery in some novel way. His other two pictures reflected skill and original ideas.

Mr. Randall, of Ann Arbor, Michigan, displayed some excellent work, artistic and technically fine. In his set of pictures, that entitled "Crumbs of Comfort" was by far the best, very natural in pose, having just enough accessories to make it interesting. The center of interest was an old woman sitting, leaning one of her elbows on a table, reading a Bible. The figure was nicely lighted, extremely soft, clear, and subdued, precisely as if she was sitting in a moderately lighted room.

In the set contributed by Mr. H. McMichael, of Buffalo, the picture entitled "The Game of Sixty-Six" displayed good lighting and posing. It was a group of several persons differently dressed. Another, called "Fascination," was the figure of a lady, technically good, but the position seemed too stiff. His remaining pictures of the set were mostly large heads. He appears to excel in large work.

Guerin, of St. Louis, Mo., displayed some beautiful large portraits, soft, sharp, and nicely lighted. A large head, nearly life size, taken direct, entitled "Laughing Eyes," of a little girl, was the best, and reflected credit on Mr. Guerin's skill as being perhaps one of the most expert portrait photographers. G. W. Motes, of Atlanta, Georgia, contributed three remarkably clear and vigorous photographs, 18 x 22 in size, representing the "Courtship of Miles Standish." In one the pose and lighting of Miles was particularly good.

In an alcove in front and close to a window were examples of unretouched and retouched negatives. In the lecture-room arranged along a railing, sitting on the floor, were some good specimens of oil and pastel painting, over-enlarged photographs, by L. J. Ullman, of New York. Being hidden behind chairs they were not easily seen.

Considering the exhibit as a whole, it may be said that there was very little variety, but there were numerous examples of good technical photographs and a few showing high artistic skill. It was a very small exhibit considering the number of prizes offered and the large membership of the association. We missed Jackson's fine photographs of Western scenery, and found no exhibits from several well-known photographers. Most of the photographs were framed in unglazed frames. There was a predominence of large work, which must be the most profitable to the photographer. Except in the genre pictures and "Enoch Arden" poem pictures, there was very little originality displayed. It would be much better to secure a fine exhibit of photographs for these annual conventions, obtain a suitable art gallery, properly lighted, to show them in, and have the business of the meetings conducted in a separate suitable hall or lecture-room, than to improperly hang a small exhibit. Such an arrangement would enable the public to inspect the photographs freely instead of being barred out a good part of the time as at Washington. We hope the new officers will pay greater attention to these details, and look for a better arrangement next year at Buffalo.

F. C. B.

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INDEX RERUM PHOTOGRAPHIC.

BY DR. JOHN H. JANEWAY, U. S. A.

[Continued from page 318.]

in those liquids, which would otherwise dissolve them. The bichromate seems to suffer reduction by the action of light, parting with some of its oxygen, which goes to the albumen or gelatine, oxidizing them and thus rendering them insoluble in warm water and other solvents that readily act upon them. This important property of the bichromate renders great service in certain photographic processes.

Ammonium Bromide—$NH_4 Br = 98$—Prepared by either adding bromine to a solution of ammonia and evaporating or by passing ammonia into hydrobromic acid. It crystallizes in colorless cubes is very soluble in water, less so in alcohol and ether. Keeps well but is apt to turn yellow when exposed to contact with moist air, owing to separation of bromine. Largely used in photography as an ingredient to the ordinary pyro developer, it acts as a restrainer and thereby tends to prevent fog and at the same time adds density. Also, sometimes used in the preparation of gelatine bromide emulsions.

Ammonium Carbonate—$2 (NH_4 HCO_3) NH_4 CO_2 NH_2 = 342$—Prepared by subliming chalk with sal ammoniac (ammonium hydrochlorate). Soluble 1 to 4 cold water, sparingly so in alcohol. Sometimes used in development, and also highly recommended by some for prints previous to toning, and to saturate the pads in printing frames previous to printing.

Ammonium Chloride—$NH_4 Cl = 53\frac{1}{2}$—Sal ammoniac—Muriate of ammonia—Prepared by the addition of hydrochloric acid to the ammoniacal liquor formed in the manufacture of gas, and then heated till it sublimes. Is obtained in tough, fibrous, whitish lumps, soluble in three parts of cold water and one part of boiling water, insoluble in absolute alcohol. It is largely used in salting paper which is to be subsequently sensitized with the silver nitrate, also in preparing chloride emulsions, etc.

Ammonium Iodide—$NH_4 I = 145$—Prepared by adding ammonium sulphate to a hot solution of potassium iodide. Alcohol is then added to precipitate the potassium sulphate which is filtered off, and the clear solution is then evaporated until the colorless cubes of ammonium iodide are obtained. Soluble, 4 parts in 3 of water, 1 part in 4 of alcohol, and also soluble in ether. It is a favorite salt in the collodion process, imparting to the collodion limpidity, sensitiveness, and adherence to the glass. Its liability to decompose and turn yellow when in contact with air may be checked by the addition of cadmium iodide.

AMMONIUM NITRATE—$(NH_4) NO_3 = 80$—Prepared readily by neutralizing solutions of ammonia or ammonium carbonate with nitric acid. On evaporation it crystallizes out in hexagonal prisms. These crystals will dissolve in their own weight of water, producing great cold while dissolving.

AMMONIUM OXALATE—$(NH_4)_2 C_2 O_4 = 124$—Prepared by neutralizing oxalic acid with ammonia. Very soluble in water, sparingly so in alcohol. It is recommended in preparing the paper for platinotype printing, etc.

AMMONIUM SULPHOCYANATE—$NH_4 CNS = 76$—A compound of sulphocyanic acid and ammonia. It is very deliquescent, and is also soluble in alcohol. Has been recommended as a fixing agent instead of hypo. It does not appear to present any great advantage over the latter. Being expensive, it is beyond the reach of many. It is used largely now in toning solutions for gelatine chloride printing paper.

AMMONIUM SULPHYDRATE—$(NH_4) HS = 51$—Prepared as an aqueous solution by passing sulphureted hydrogen through an aqueous solution of ammonia. By passing the same gas through an alcoholic solution of ammonia, it may be obtained in a crystalline form. When exposed to the air for any length of time, it turns yellow. Precipitating many metals as sulphides, it is useful to recover silver from the various baths. It has also been recommended and used as an intensifier.

AMYL ACETATE—Prepared from amyl alcohol and strong acetic acid. A colorless, oily fluid with a peculiar odor and a burning acid taste. Lately come into use in a lamp recommended as a reliable standard light for testing the relative sensitiveness of plates, and for other purposes. It is objectionable from the peculiar odor given out, and from producing effects like coma when long exposed to its influence.

Amyl Acetate Collodion—Prepared by dissolving pyroxylin (gun cotton) in amyl acetate, and for some purposes it has great advantages over the ordinary collodion. There are some samples of gun cotton that are almost insoluble in alcohol or ether, that are perfectly so in amyl acetate. The collodion so prepared is very structureless and tough, and it is admirably adapted for making films for yellow screens for orthochromatic photography. A film of it spread on glass and dried comes away at once from the glass on being plunged into water. This collodion keeps well.

ANGLE, WIDE—A term applied to certain forms of lenses which embrace a larger amount of view than others. The width of angle of view of a lens is determined by the relation of its focal length with the size of the image which the lens will define. The shorter the focus, the wider the angle. Measuring the width of angle causes reduction of the aperture, which means loss of illumination. Therefore, as a rule, wide angle lenses are less rapid than the rectilinear type. They exaggerate perspectives painfully by increasing the apparent size of near objects out of all proportion with distant ones, and by bringing the distant much too near the foreground. In confined areas and interiors they are of much use. If we recollect that the angle of view of the human eye does not exceed say about 50 deg. for general use, no lens should be employed that would much exceed that angle. The following rule and table from Wall's dictionary may be of use to the amateur and his professional brother in determining the width of angle of a lens. Rule for finding width of angle: Divide the base line of the plate by the equivalent focus of the lens.

It the quotient is	The angle included is	If the quotient is	The angle included is
·5	28 degrees.	1·155	60 degrees.
·517	29 "	1·178	61 "
·536	30 "	1·2	62 "
·555	31 "	1·225	63 "
·573	32 "	1·25	64 "
·592	33 "	1·274	65 "
·611	34 "	1·3	66 "
·631	35 "	1·32	67 "
·65	36 "	1·36	68 "
·67	37 "	1·375	69 "
·689	38 "	1·4	70 "
·708	30 ..	1·427	71 "
·728	40 "	1·45	72 "
·748	41 "	1·48	73 "
·768	42 "	1·5	74 "
·788	43 "	1·53	75 "
·808	44 "	1·56	76 "
·828	45 "	1·59	77 "
·849	46 "	1·62	78 "
·87	47 "	1·649	79 "
·89	48 "	1·678	80 "
·911	49 "	1·7	81 "
·933	50 "	1·739	82 "
·954	51 "	1·769	83 "
·971	52 "	1·8	84 "
1·0	53 "	1·833	85 "
1·02	54 "	1·865	86 "
1·041	55 "	1·898	87 "
1·063	56 "	1·931	88 "
1·086	57 "	1·965	89 "
1·108	58 "	2·	90 "
1·132	59 "		

Example: Given a lens of 13 inches focus, required the angle of view included on a 8×10 plate. 10÷13 = 0·77, corresponding to 42·5 deg.

ANGLE OF VIEW POSSIBLE WITH A LENS—The equivalent focus being known—If the base line of the picture is equal to the equivalent focus of the lens, then the angle of view will be 53 degrees. If it measure one-quarter more than the equivalent focus of the length, the angle will be 64 degrees. If half as much again as the equivalent focus, the angle will be 74 degrees. If three-quarters more, the angle will be 84 degrees. If double the length of the equivalent focus of the lens, the angle will be 90 degrees. For further information see "Wilson's Photographics."

ANGULAR APERTURE—Is the relation borne by the working diameter of a lens to its focal length. The greater the angular aperture, the less depth of focus, and corresponding loss of covering power. The portrait lenses are examples of this.

ANGULAR PERSPECTIVE—When a square or any cubical form is viewed at the angle, the two sides will not appear to vanish in the point of sight, but run on to two points on the horizontal line, called vanishing points. These two points are always equidistant from each other, being one-quarter of a circle.

ANILINE—$C_6H_5NH_2$—Prepared in large quantities by reducing nitrobenzine with ferrous acetate. Also by the destructive distillation of nitrogenous organic matter, and it is one of the constituents of coal tar oil.

Aniline Blue—Has been used to procure pure whites in prints very successfully. A stock solution is made as follows: ½ oz. of aniline blue, letter R, is dissolved in 16 oz. of water. Of this stock solution take 30 or 40 drops and add to a 40 oz. fixing bath. The toned prints are placed in this bath and allowed to remain from 12 to 15 minutes, and are then removed to a strong solution of salt and water, where they are to remain for five minutes; then gradually dilute the bath with fresh water, so that the change of temperature will not be too sudden. The danger of blisters is reduced to the minimum, and pure whites are assured by this method. A blue tint or moonlight effect can be produced by substituting for the salt solution a saturated solution of alum. The blue is permanent. If the color is too dense, immerse in a saturated solution of borax. This will give the tint desired.

ANTIDOTES—Remedies given to counteract the effects of poisons, or of anything noxious taken into the stomach.

TABLE OF POISONS AND ANTIDOTES.—ELSDEN'S.

	Poisons.	Remarks.	Symptoms.	Antidotes.
Vegetable Acids.	Oxalic Acid, including Potassium Oxalate.	One drachm is the smallest fatal dose known.	Hot, burning sensation in throat and stomach, vomiting, cramps and numbness.	Chalk, whiting or magnesia suspended in water. Plaster or mortar can be used in emergency.
Caustic alkalies.	Ammonia. Potash. Soda.	Vapor of ammonia may cause inflammation of the lungs.	Swelling of the tongue, mouth and fauces, often followed by stricture of the œsophagus	Vinegar and water.
Metallic Salts.	Mercuric Chloride.	Three grs. the smallest fatal dose known.	Acid metallic taste; constriction in throat and stomach, followed by nausea and vomiting.	White and yolk of raw eggs with milk. In emergency flour paste may be used.
	Acetate of Lead.	The subacetate is still more poisonous.	Constriction in the throat and stomach, crampy pains and stiffness of abdomen, blue line round the gums.	Sulphates of soda or magnesia. Emetic of sulphate of zinc.
	Cyanide of Potassium.	*a*. Taken internally, 3 grs. fatal.	Insensibility; slow gasping respiration; dilated pupil and spasmodic closure of the jaws.	No certain remedy. Cold affusion on the head and neck most efficacious.
		b. Applied to wounds and abrasures of the skin.	Smarting sensation.	Sulphate of iron should be applied immediately.
	Bichromate of Potash.	*a*. Taken internally.	Irritant pain in stomach and vomiting.	Emetics and magnesia and chalk.
		b. Applied to slight abrasions of the skin.	Produces troublesome sores and ulcers.	
	Nitrate of Silver.		Powerful irritant.	Common salt to be given, immediately followed by emetics.
Concentrated Mineral Acids.	Nitric Acid.	2 drachms have been fatal. Inhalation of fumes has also been fatal.	Corrosion of windpipe and violent inflammation.	Bicarbonate of soda or carbonate of magnesia, chalk, plaster of the room beaten up in water.
	Hydrochloric Acid.	4 drachms have caused death.		"
	Sulphuric Acid.	1 drachm has been fatal.		"
	Acetic acid concentrated	has as powerful effects	as mineral acids.	
	Iodine.	Variable in its action; 3 grs. have proved fatal.	Acid taste; tightness about the throat; vomiting.	Vomiting to be encouraged, and gruel, arrowroot and starch given freely.
	Ether.	When inhaled.	Effects similar to chloroform.	Cold affusion and artificial respiration.
	Pyrogallol.	2 grs. sufficient to kill a dog.	Resembles phosphorus poisoning.	No certain remedy; speedy emetic desirable.

Antiplanetic—Term applied to a lens composed of two non-symmetrical combinations, each of as great but opposite faults as possible, which correct each other. One combination has a shorter focus than the objective as a whole, and the other has a negative focus. This combination is claimed to correct astigmatism better than any other.

Antiquity of the Lens—The Assyrian lens found at the excavation of Sargon's Palace Nimroud, and now in the British Museum, can be with a reasonable probability, according to authorities, dated back to 721–705 B. C.

Aperture of a Lens, the Working—That part of the surface of the lens which is actually utilized in impressing the image on the plate. It is not, as supposed by some, that the whole surface of the lens is always utilized, or that the diameter of the diaphragm is the working aperture of the lens. In all double lenses the working aperture always varies with each diaphragm or stop, and the illumination will be found to vary in geometrical proportion with each stop.

Aperture Ratio—Is very easily found by simply measuring the focus of the lens in inches, then measure the diameter of each stop, and divide one by the other, placing the quotient underneath a $\frac{f}{}$. But should one dislike this mathematical work, he can refer to the Year Book of Photography, 1889, page 91, and be able to construct from directions there given a scale for measurement of all stops.

Aplanatic—Gr. *α* priv. *πλανάω* (planao) to "wander."—A lens of two or more lenses of different curvatures so combined that their respective aberrations compensate or neutralize each other, and the resulting lens is free from spherical aberrations. Rays of light diverging from a point parallel to the axis of these lenses, passing through it, though suffering refraction, are brought to a definite focus at a point which is the true focus of the lens. These lenses give reasonably sharp definition with their full aperture.

Apparatus—All such articles as are used in producing photographs, as camera, tripods, slides, etc., described under appropriate heads.

Architectural Photography—For architectural work the focusing screen of the camera should have on it some parallel lines ruled as an aid in getting the lines of the building, pillars, etc., straight. In working at interiors of large buildings, it is well to shoe the spikes of the tripod with strips of cork or India rubber to prevent its slipping on the floor. A lens of the usual rectilinear type can be used, but preferably a wide angle lens, covering a plate a size larger than the camera holds. This, while not giving a too false perspective,

ENGLISH NOTES.

BY THOMAS BOLAS.

Supplementary Exposure of Gelatine Plates.—In the old days of wet collodion the question of shortening the time of exposure in the camera by a pre-exposure or an after-exposure of the plate to light, was a more immediately important matter to the photographer than it is in the present time of rapid plates and short exposures; but even now in many cases it would be a considerable advantage to reduce the exposure to one-half, and if we may judge by what Mr. Alexander Cowan said and showed at the last meeting of the London and Provincial Photographic Society, there may be hope of doing this. It was found that if the best exposure, under ordinary conditions of development, was one second, an exposure of half a second would give an equally good result if, after the image was fairly out and had ceased to increase notably under the developer, the plate was held a little distance from a small naked gas flame. The great point in Mr. Cowan's method of supplementary exposure is to bring out all that can readily be brought out by the developer, and then to give the general exposure to light, as at this stage not only is the action more on the image and less on the transparent parts, but it is only under these circumstances that the effect of the supplementary exposure can be watched and thus properly regulated. Under the action of the gas-light the details in the shades are seen to develop, and it is quite easy to stop the action of light at a point short of the production of general fog.

Burton on Short Exposures.—The advice of Mr. W. K. Burton on photographic matters has been so well proved by experience that no apology need be made for summing up an article of his in the current number of *Photography*, in which he discusses the phenomena of persistence of vision in relation to camera work. "It is certainly best to work with exposures as long as a tenth of a second, whenever natural results can be got with such exposures." In most cases one may give such an exposure in the case of a street view, provided a moment is selected when nothing is moving rapidly across the foreground.

Photographing the Horse.—Mr. A. G. Hudson is not the only one who has complained of something unnatural in most photographs of the horse, and his hints as to the management of the animal, if attended to, will serve to assist in mending matters. His main points are: Work, when practicable, from the near side, and put the near fore leg a trifle forward, which will generally cause the horse to put his off hind leg forward, but if he doesn't you must do it for him. A weak mixture of kerosene oil and water applied where flies settle may be useful in hot weather, but care must be taken not to put the mixture in his eyes. To attract his attention let some one walk slowly towards him with some of the food he most fancies. "But," says our author, "don't take the top off in too great a hurry, for when he pricks his ears he will raise his head gradually. When it goes no higher is the time to expose." He must have nothing to eat just before the exposure, but if he has been good, give him something after. Lastly—tie up all dogs.

Panoramic Pictures.—When a series of photographs is taken by rotating the camera, it is too common a plan to take great pains to match and join the prints exactly, things which can never be done so successfully as to prevent the observer losing the effect of the picture in seeking for the joints. When the course recommended in the *British Journal* is taken, that of leaving a gap of about an eighth of an inch between the prints, in every case one obtains a much more pleasant and realistic effect. The mind does not dwell on the joints, because they are obvious and no effort is made to conceal them, and minute differences in vigor or tone are not noticed.

Mr. W. E. Debenham on Colored Mediums for Printing.—Mr. Debenham has recently found that when a commercial ready-sensitized paper is used, not only are more vigorous prints obtained when the printing frame is covered by a green glass, but the prints tone more readily to the kind of blackish tone which is now generally sought after. Ordinary paper, sensitized as wanted and with the full excess of nitrate of silver left in it, gives the full vigor and easy toning quality, whether the green glass is used or not. The commonly asserted advantage of printing from weak negatives in a subdued light only seems to hold good in the case of the ready-sensitized paper. Mr. Debenham's theory of the matter is that in the case of the ordinary paper with considerable excess of silver nitrate the chlorine which is set free from the chloride of silver by the action of light is at once taken up by the nitrate, but in the case of the ready-sensitized paper much of the chlorine has to diffuse away, and this requires time, so that if the printing is quick the free chlorine degrades the image.

Varnishing Negatives.—No doubt the average amateur in this country does not varnish his negatives. He is content to take a few prints and then he places the negative aside, it perhaps having absorbed traces of silver from the printing paper, not sufficient perhaps to show immediately, but enough to bring about a slowly developing brown stain, the removal of which is hopeless. The *Photographic News*, in an article on varnishing, points out how desirable it is that varnishing should be the rule, if only to protect the film from atmospheric moisture. A varnish sold in our shops as white hard varnish—a solution of bleached shellac in alcohol—is that now generally used for negatives. In the room used for mounting and the odd jobs incident to photography, it is well to have a small gas or kerosene stove, and when the plate has become to all appearances dry, spontaneously, it is warmed over the stove, but not so hot as to be unpleasant to the back of the hand. Being now held by the corners the varnish is steadily poured on, the plate being tilted just enough to make the liquid reach the corners in regular succession till one of the four corners is reached, when the excess of varnish is steadily drained back into the bottle, with a very slight rocking motion. The plate may now be heated more considerably than before to thoroughly harden the film. The above is the old varnishing method, so long employed for wet collodion, but several circumstances make the manipulation much easier on a gelatine negative than on a collodion negative. The Dammar and benzole varnish, which was a regular institution in the wet collodion days, is referred to rather slightingly by the *Photographic News*, but as this varnish is easier to use than the lac varnish, and for most purposes as satisfactory, it well deserves to hold its place. An ounce of gum Dammar is dissolved in eight ounces of benzole and the solution is filtered. The films being perfectly dry, this varnish is poured on the cold plate and then drained off. The resinous coating will now be dry in a few minutes. Perfect fixation, thorough washing and complete dryness are essentials, and unless these conditions are fulfilled before the varnish is applied the resinous film will soon become discontinuous, and silver from the paper is likely to reach the film and ruin the negative.

Captain Abney on Carrying the Camera.—Captain Abney by no means stands alone in saying that by far the best way to carry the camera when one has to do much walking, especially in a mountainous district, is to carry it on the back, knapsack fashion, either knapsack straps being fastened on the camera case, or, as far as my own experience goes, a special knapsack of light water-proof cloth being made to put over the ordinary camera case. In either instance the legs of the tripod are strapped to the top. In order to ensure comfort in carrying a knapsack package, some trouble should be taken before starting to adapt it to one's shoulders, a little padding here and there with horse hair being often desirable. "Any package which is not firmly attached to the body," says Abney, "is a source of danger in climbing."

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CORRESPONDENCE.

To the Editors of the American Amateur Photographer:

The 5 x 7 plate is a size that is gaining favor and is destined to surpass the 5 x 8. Artistic considerations unhesitatingly lead to the choice of the former. I wish to make a plea for the 4¼ x 5½ against the 4 x 5 plate. The latter is as objectionable as the 5 x 8 on the ground of form, whereas the 4¼ x 5½ is a symmetrical and artistically proportioned plate. There is no necessity of having both of these sizes. The 4¼ x 5½ would add materially to the length and slightly to the width of the picture—in some instances a matter of great importance; it gives a plate of much better proportion, and the increased size adds no appreciable weight to the outfit. Dealers may call the size here recommended an "odd size"; some of them have applied even more contemptuous epithets to it in my hearing, but I submit that it is a decidedly better proportioned plate than the conventional 4 x 5, and the one that intending purchasers should select in preference to the 4 x 5. R. A. K.

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

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Pacific Coast Amateur Photographic Association.—The regular monthly meeting of the Pacific Coast Amateur Photographic Association was held at their rooms, Merchant Street, San Francisco, on September 4th, the attendance being very large. Mr. E. L. Woods, the President, occupied the chair and reported what had been done by the executive committee during the month, all the business of the association being now in the hands of the committee, and the regular meetings devoted entirely to photography.

Mr. George D. Dornin, an old pioneer of the State, demonstrated the daguerreotype process, and gave some very interesting reminiscenses of photography in the mining camps in the early days of California. He was listened to with great attention, and some specimens of his work, nearly forty years old but still perfectly preserved, were greatly admired.

It was announced that the association had secured the exclusive right to the windward stake boat at the forthcoming State regatta on the eighth instant, and had made arrangements to have it fitted up with dark-rooms, etc., a tug to take the members to and from the boat had been chartered, and a good lunch would be provided.

The lantern entertainment of the evening was " A Trip to the Yellowstone Park," being a series of views of that most interesting country, kindly loaned by Mr. Sam C. Partridge, and described by Mr. Knight White.

The Richmond Camera Club.—At the last meeting of the club four new names were added to our list of members, among the number that of Mr. E. F. C. Davis of the Schuylkill Club. Dr. William H. Taylor gave us an interesting talk on lantern slides. We expect to have an exhibit of lantern slides with an interesting lecture by our President, Professor Charles H. Winston, during the month of October or November. Our Vice-President, Mr. R. A. Lancaster, Jr., has just returned from a trip to Nantucket and Martha's Vineyard with a number of excellent specimens of his skill with the camera. At our next meeting we expect to view the result of the labor of our members who have had their cameras with them during their summer vacation. By the kindness of our members, we have the following magazines on our table: *Wilson's*, THE AMERICAN AMATEUR PHOTOGRAPHER, and *Anthony's Bulletin.* We are young yet and are satisfied to begin in an humble way. Our membership is now twenty-four, but we expect to increase it to fifty before the end of the year.—*C. D. Habliston, Secretary.*

The Society of Amateur Photographers of New York.—At the first fall meeting of the society held in its new quarters, 113 West 38th Street, President James H. Stebbins, Jr., presiding for the first time since the annual meeting in April, welcomed the members to the new quarters, explaining how the society organized in the spring of 1884, by Mr. F. C. Beach, with a membership of but twenty-nine, had now increased to over two hundred, showing, he thought, that the interest in amateur photography was rapidly growing. He stated that the present quarters would be large enough for a while, but predicted the time would come when the society would need a large building of its own. He congratulated the society on the acquirement of the present rooms, and believed that it would result in a large accession to its membership.

At the conclusion of his introductory remarks, Miss C. W. Barnes read her paper on " An Amateur at the Washington Convention " (as given in our September number), which was favorably received, and a vote of thanks was accorded.

Mr. T. J. Burton, the secretary, stated that three active, four subscribing, and two corresponding members had been elected since the June meeting.

Mr. F. C. Beach exhibited a model of the latest Bausch & Lomb Diaphragm Shutter, explaining the improvements, such as making the leaves of the shutter of hard rubber, which were lighter than metal, were not affected by dampness, and always remained black.

There was also a new arrangement of the pneumatic retarding tube or "dash," which is placed upright on the side of the lens tube instead of over it horizontally. This made the shutter more compact. The lever used in regulating the size of the diaphragm is now made in the form of a black disk placed behind the actuating spring barrel. The size of the diaphragms are printed on its face, so that it is an easy matter by rotating it to fix the aperture wanted. Another disk on the front of the spring barrel regulates the speed of the shutter from 1-100th of a second up to a 3-second exposure. Then the lever for changing the shutter from a time to instantaneous movement is fixed in plain sight on the front of the shutter, and is easily got at. The pneumatic release pump is also made larger and stronger. The three essential points, viz., device for quickly changing the diaphragm opening, for easily regulating the speed, and for changing the shutter from time to instantaneous movements, all seem to be arranged very compactly and perfectly. In addition to all this the shutter is very beautifully and accurately made. In reply to questions he stated that he had not verified the speed as stated on the dial, but suggested as a good test that a trotting horse be photographed at right angles to the lens, about fifty feet distant. If his feet came out distinct it would be proof that the shutter was pretty fast. This would test the speed of any shutter. Another advantage of the shutter in question was that there is no jar. Its movements are equalized.

He also showed a timing apparatus especially useful for telling when to take in printing frames, invented by Mr. Harry Ford, of Lyndon, Kan. It consisted of a square box having a clock mechanism and an alarm-bell inside. The upper face is perforated with holes in concentric circles, in which pegs projecting beneath the under surface are inserted. A small removable dial with a pointer on its face moves around like a minute-hand of a clock. Traveling with this dial on the same shaft, underneath the upper face of the box, is a bell-hammer having a trip attachment. When the clock movement rotates it carries with it the bell-hammer; the latter comes in contact with the pin set ahead in a hole in one of the concentric circles, causing the bell to ring. A printing frame having a similar number to that on the end of the pin, which was put out twenty minutes before, would on this signal be taken up and examined and the negative print should be ready to take out. Each printing frame is numbered and each negative is judged beforehand. Whatever time it is supposed to take to make a print from it is marked off, and the pin put in ahead of the pointer on the dial, in one of the holes on the face of the apparatus corresponding to the minutes required. When the pointer on the dial gets opposite the pin, the bell rings, thus notifying the operator to look at that numbered frame. Allowance for clouds passing over the sun has to be made. Mr. Ford finds it a very useful piece of apparatus where one man has to manage a large number of printing frames.

Communications were read from Mr. S. T. Harvey, Secretary of the Amateur Photographic Association of Victoria, at East Melbourne, Australia, wishing to exchange sets of lantern slides with the society, and from Mr. H. N. Sweet, President of the Boston Camera Club, relative to the Robinson collection of photographs. The Treasurer, Mr. C. C. Roumage, presented his quarterly report ending June 30, 1890, showing balance on hand in the special reserve fund of $420, and in the general fund of $1,096.60. His report was accepted and later, on his motion, the $420 was voted to be transferred to the general fund. The Lantern Slide Committee reported that arrangements were being perfected for an interchange of lantern slides with the Vienna Amateur Club, the Photographic Society of the North of France, and with one or two societies in England. An interesting lantern season was promised. The committee had also secured a few sets of slides from the "Interchange of Illustrated Subjects," as carried on by the Boston Camera Club, for extra exhibitions. The President stated that Mr. R. H. Lawrence offered for the use of the society slides from many of his excellent negatives taken in Spain.

A vote of thanks was accorded the Boston Camera Club for its kindness in loaning the Robinson photographs, and to the Pacific Coast Amateur Photographic Association for the pictures sent on by them for exhibition. Many visitors have inspected the Robinson photographs, which have been universally admired. They are now on exhibition at the rooms of the Photographic Society of Philadelphia. The artistic work of the Pacific Coast Society is greatly appreciated.

At the same meeting the Committee on New Quarters reported that its work was very nearly done, and that every member saw for himself how superior the rooms were to those at Thirty-Sixth Street. Considerable expense had been incurred to fit up the place as elaborately as it was, which it was thought would be easily met by the increase in membership. The committee thought no photographic society in the country had finer quarters than the society, and extended an invitation to all amateurs and others to inspect the rooms.

On September 17th the rooms were informally opened with a "Smoking Concert," very largely attended and greatly enjoyed. Lantern slides, music, sleight-of-hand tricks, and other things amused the guests. Substantial refreshments were to be had in the laboratory room.

An illustrated lecture, entitled "A Tour of the Holy Land and to Constantinople," by Dr. Charles Stuart Welles, given in the meeting-room of the society on Friday evening, September 26th, was very entertaining and instructive. There was a full attendance.

Boston Camera Club. Interchange of Illustrated Subjects.—From a recent circular we learn that the following sets are now ready for exhibition: "In and About Columbus, O.," "Chicago," "The White Mountains," "Glimpses of California," "Boston." The following are in preparation: "Illustrated Liverpool," "In and About San Francisco," and "Under the Shadow of Tamalpais." The following clubs comprise the circuit: Boston, California, Chicago, Columbus, O., Medford, Louisville, Newark, New York, Peekskill, Pottsville, Providence, Rochester, St. Louis, Syracuse, Bridgeton, N. J. Mr. Reed, the manager, is to be congratulated on the success he has made of the Interchange.

Ridgewood (N. J.) Camera Club.—A reception was held at the new club rooms, Tuesday evening, September 16th. The rooms were prettily decorated and the walls hung with the work of the members. Messrs. Hales, Levien, Carrigan, Walton, Lefetva, and Alexander, made notable exhibits. The officers of the club are: Peter O. Terhune, President; H. W. Hales, Vice-President; Walter B. Walton, Secretary, and F. Levien, Treasurer.

The Camera Club of Hartford.—The regular monthly meetings of the club were resumed Tuesday evening, September 9th, after a two months' vacation. There had been no special topic announced, but those present found sufficient subjects of conversation in the exchange of summer experiences, plans for the fall and winter work, and the discussion of a change of quarters. The membership of the club and the attendance at meetings have increased so much in the past year that our present rooms are wholly inadequate as accommodations. But before the lantern slide season opens the club hopes to be located in larger and more convenient quarters. For the next regular meeting it was announced that a practical demonstration of some of the various processes of print making would be given. One of the members will develop some platinotypes, another make some bromide prints, a third tone some aristotypes, and as for silver prints, two of the members got to sparring in a friendly way about the relative merits of tungstate soda and bicarbonate soda for toning, and they were at once seized upon by the committee and commanded to be ready to read a paper upon the merits of, and tone a batch of prints with, their respective baths, at the next meeting.

A special meeting of the club was held Tuesday evening, September 23, 1890, to witness a demonstration of slide making by Mr. C. R. Pancoast of Waterbury. President Parmele called the meeting to order, and in a few words introduced Mr. Pancoast, who read an extremely interesting paper upon "Lantern Slide Making." The speaker was followed with close attention, and many notes of telling points were jotted down for future reference. At the close of the paper the gas was turned off, and Mr. Pancoast proceeded to develop some slides that had been exposed a few days before. The first was treated with eikonogen, and came up rapidly and with great brilliancy; the second was developed with ferrous-oxalate, and came up much slower, but with equal brilliancy; the third one had been purposely overtimed to show its behavior in the developer; the fourth was from the same negative, properly timed, and showed a decided contrast to the third, having much more clearness and brilliancy in the sky and distant parts of the view. While the slides were fixing and washing, an informal discussion of apparatus, lanterns, etc., was held, many valuable hints relative to the same being given by Mr. Pancoast. Before closing, the club extended a vote of thanks to Mr. Pancoast for his instructive demonstration. [Mr. Pancoast's paper will be published in the November number.—ED.]

BOOKS AND EXCHANGES.

We have received the first number of the *American Periodical Index*, published at New Haven. The purpose of this new candidate for popular favor is to publish a complete index to all the leading magazines as well as a list of the new books of the month. In these days of increasing magazine literature such a publication has a wide field. The new *Index* seeks to occupy this field, and if the promise of its first number is fulfilled, it ought to find a generous support. We shall be pleased to furnish the *Index* in connection with our magazine for $2.50. The subscription price of the *Index* is $1.00.

The September *Beacon* has a remarkably full and valuable article on development, entitled "A Complete Treatise on Development," which is a striking example of the art of saying much in few words.

The *Photographic Times* for September 12th has a remarkably good photogravure of the Daguerre Memorial, showing a much more dignified example of sculpture than the artist's sketches seemed to promise to some of our contemporaries who mistook the rough outline for the finished sketch. American photographers have no reason to feel ashamed of the memorial to the clever Frenchman who by some hocus-pocus has gained the title of "Father of Photography," notwithstanding that the method of obtaining photographic pictures which he discovered bears about as much relation to modern methods as green cheese does to the moon. Fox Talbot is the man whom American photographers should have honored.

Photo-Engraving, Photo-Litho and Collotype. W. T. Wilkinson. London. Hampton, Judd & Co.

This is the fourth edition of Mr. Wilkinson's excellent hand-book to the photo-mechanical printing processes, and the instructions given are practical and reliable. As Mr. Wilkinson well says in his preface: "The elements of success are three, viz., suitable apparatus, careful practice, and reliable formulas." Of these, the second is the most difficult of acquirement, and the lack of it is the reason why so many beginners in the photo-mechanical methods fail of success. Mr. Wilkinson has given "reliable formulas," which is as much as can fairly be expected of any book on the subject. We notice that he states that the book is not a translation, and perhaps for that reason we miss one or two matters connected with collotype which most of the foreign books are fond of giving. The book may be safely followed.

Part XV. of Dr. Fabre's "Encyclopedia of Photography" continues and concludes the subject of "Photo-Typography," and treats the allied subjects of "Photo-Galvanography," "Photo-Plastography," "Photo-Chromography," "Engraving on Glass," and "Photo-Ceramics."

The Elliott-Clymer Company, Auburn, N. Y., send us their illustrated "Catalogue of Optical Lanterns and Instruments of Projection," which describes their "Home" and "Professional" lanterns and stereopticons. There is also a long list of slides. Well-made instruments at a moderate price are a specialty with the firm.

Pictures of East Anglican Life. By P. H. Emerson; 1889.

The book consists of a portfolio containing ten photo-ink etchings from pictures made by Mr. Emerson, designed to illustrate his reasons for short focusing, as set forth in his book on "Naturalistic Photography." It is in effect a supplement to that book, and is useful in showing just why a picture should be a little out of focus to look artistic. That the pictures illustrate his ideas in their extreme, there is no doubt.

From a photographic standpoint we cannot see any beauty in one which he says was deliberately thrown out of focus, called "Where Winds the Dike." He says: "By the judicious use of diaphragms the middle distance and distance are relatively truly rendered." The picture is 4½ x 6 in size, and when held four feet from the eye still looks blurred and indistinct. Were it a very large photograph the blur might make it artistic. The central object of interest, a bridge, is grossly out of focus. We cannot, as practical photographers, agree with Mr. Emerson's explanation of this picture.

Another peculiar view is "The Fringe of the Mere." The lilies in the foreground are so indistinct as to look like black patches or dots shooting above the water, while the trees and other objects in the distance are sharp. The lilies are only suggested, says Mr. Emerson. We can see no beauty in them. Nobody would imagine they were lilies any more than lumps of wood floating on the water. We should say it would be improved if the lily section was cut out. In most cases Mr. Emerson advocates having the distance out of focus, which he suggests harmonizes the picture. In the "Fringe of the Mere" he reverses this theory by having the distance sharp and the foreground blurred, and does not give any reason for it. However, it is right that the distance should be distinct, since it is the principal part of the view.

The "March Pastoral" we think is very pretty, but we should have preferred having the center sheep in focus instead of the one to the left. It is hard to distinguish between Mr. Emerson's explanation of the difference between the distance being out of focus and not fuzzy. To us either description seems alike. If a part of the picture is out of focus it looks fuzzy, and if it is fuzzy we should say it was out of focus.

To our notion the picture called "Toad in the Path," which Mr. Emerson states is all out of focus, is more attractive and picturesque than "Where Winds the Dike," because it is larger and more harmonious, the high reeds in the foreground blending with the trees in the distance. "A Stiff Pull," showing a team of horses plowing, is well rendered, the blur in the figure of the man indicating motion. A fuzziness appears on the outline of the figure, presumably due to the ink in printing.

The other pictures, "In the Haysel," "The Poacher," "Colts on Norfolk Marsh," "In the Barley Harvest," "Hay-Maker with Rake," are all interesting, and show a novelty in the treatment of different subjects very creditable to Mr. Emerson and instructive to the student.

It will be some time, we think, before photographers accustomed to making clear, crisp, distinct photographs will be satisfied with pictures mostly blurred. It will only be those who understand how to view pictures in an artistic sense that can comprehend the unusual ideas Mr. Emerson has advanced. In order to assist in educating photographers and members of societies, Mr. Emerson has presented to the principal associations and journals a portfolio of his pictures, which will doubtless call forth considerable comment.

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United States Photographic Patents

Issued in September, 1890.

SEPTEMBER 2d.

435,388—Device for Exhibiting Pictures and Like Articles; G. W. Bolton, Milwaukee, Wis.
435,681—Device for Oscillating Photographer's Developing Pans; V. H. Buschmann, Baltimore, Md.
435,884—Flash Lamp; H. Campbell, Brooklyn, N. Y.

SEPTEMBER 9th.

436,012—Photographic Camera; J. T. Bedford, New York, N. Y.
436,060—Photographic Magazine Camera; J. Lalor, Aurora, Ill.
436,098—Photographic Camera; H. Heinrich, Berlin, Germany.
436,117—Album; W. Bergner, Baltimore, Md.
436,243—Easel Album; T. Kelley, New York, N. Y.

SEPTEMBER 16th.

436,347—Photographic Camera; W. H. Fuller, Passaic, N. J.
436,391—Photographic Camera; W. I. Adams, Montclair, N. J.
436,404—Photographic Shutter; T. R. Dallmeyer, London, England, and F. Beauchamp, Tottenham, England.
436,587—Producing Photographic Films; Y. Schwartz, Hanover, Germany.

436,627—Apparatus for Automatic Photography; T. E. Enjalbert, Paris, France.
436,658—Photographic Camera Shutter Attachment; H. W. Hales, Ridgewood, N. J.
436,687—Photo-Engraving Frame; J. Baynes, Westchester, N. Y.
436,745—Detective Camera; M. A. Seed, St. Louis, Mo.

SEPTEMBER 23d.

436,855—Photographic Camera Shutter; F. A. Hetherington, Brooklyn, N. Y.
436,866—Burnisher; W. H. Boles, Syracuse, N. Y.
437,063—Method of Producing Line Drawings; L O. Vincent, Pentwater, Michigan.
437,104—Coin-Operated Photographic Apparatus; C. H. C. Föge, C. H. Griese, and J. L. F. Raders, Hamburg, Germany.
437,170—Producing Photo-mechanical Printing Plates; R. Aramburo, Seville, Spain.
20,166—(*Design Patent*)—Book or Album Leaf; E. G. Thorp, Boston, Mass.

SEPTEMBER 30th.

437,290—Photographic Camera; A. E. Colgate, New York.
437,629—Photographing without a Dark-Room; Charles Spiro, New York.
437,630—Means for Filling Photographic Plate Holders without a Dark-Room; Charles Spiro, New York.
437,631—Photographic Developing Apparatus; Charles Spiro, New York.
437,655—Photographic Shutter; W. H. Lewis, Huntington, N. Y.
437,656—Plate Holder; W. H. Lewis, Huntington, N. Y.

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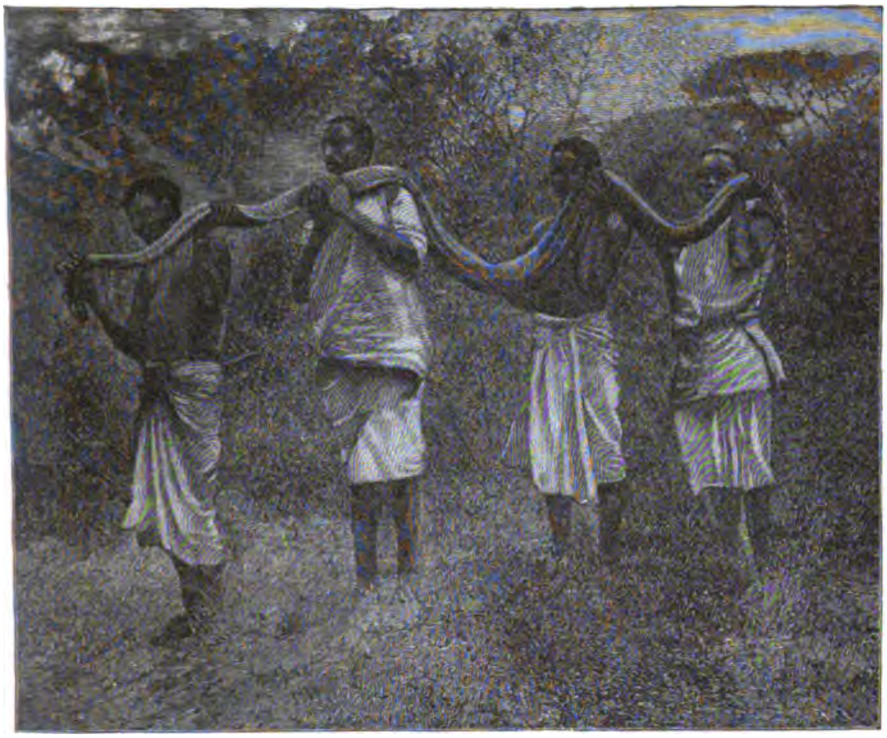
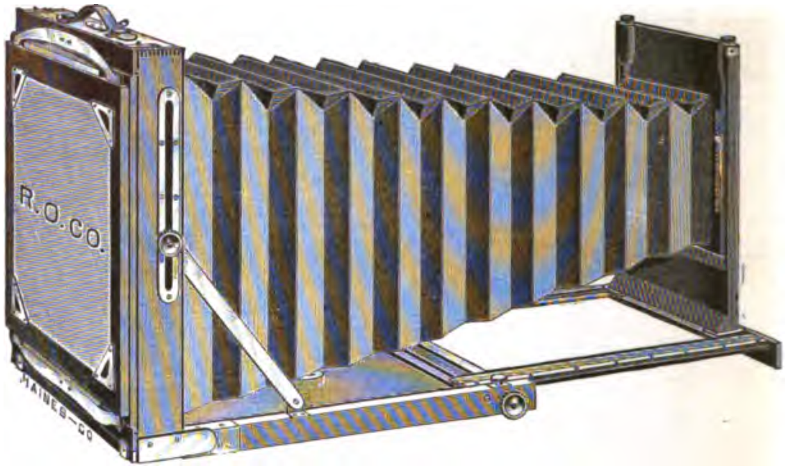


AFRICAN PYTHON PHOTOGRAPHED WITH HAWKEYE CAMERA NEAR THE USERI RIVER.

"CAUTIOUSLY parting the bushes with the muzzle of the gun, I beheld the reptile of the accompanying picture, his body coiled on the ground, and his head elevated about three feet. His tongue darted from his mouth viciously as I looked through the parting in the bush. Had I been prepared to convey him to the coast, I believe I should have been tempted to capture him alive. With a slip-noose at the end of a pole, I have no doubt that he could have been secured without much trouble. A load of partridge-shot in the head, a tremendous thrashing around in the bushes, and soon the delighted negroes were dragging the python into camp. Having photographed him with my ever-ready HAWKEYE Camera, I skinned him, and brought the trophy home to New York. He was an ordinary African python, fourteen feet long—a considerable come-down from Zaidi Nubi's tree."

Extract from "Africa as Seen by Thomas Stevens and the Hawkeye," in which Mr. Stevens describes, in the same happy and interesting vein which characterized his "Around the World on a Bicycle," the personnel and customs of an African expedition, a week's sport in the prolific game country adjoining the famous snow-capped mountain Kilimanjaro, with a valuable commentary on the latter, photographing a band of Masai warriors and other incidents of his trip. Fine engravings from negatives made in Interior Africa. Send 10c. in stamps for sample copy to THE BLAIR CAMERA COMPANY, Boston, Philadelphia, or Chicago.

The "Universal" Camera.



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PARTIALLY FOLDED.

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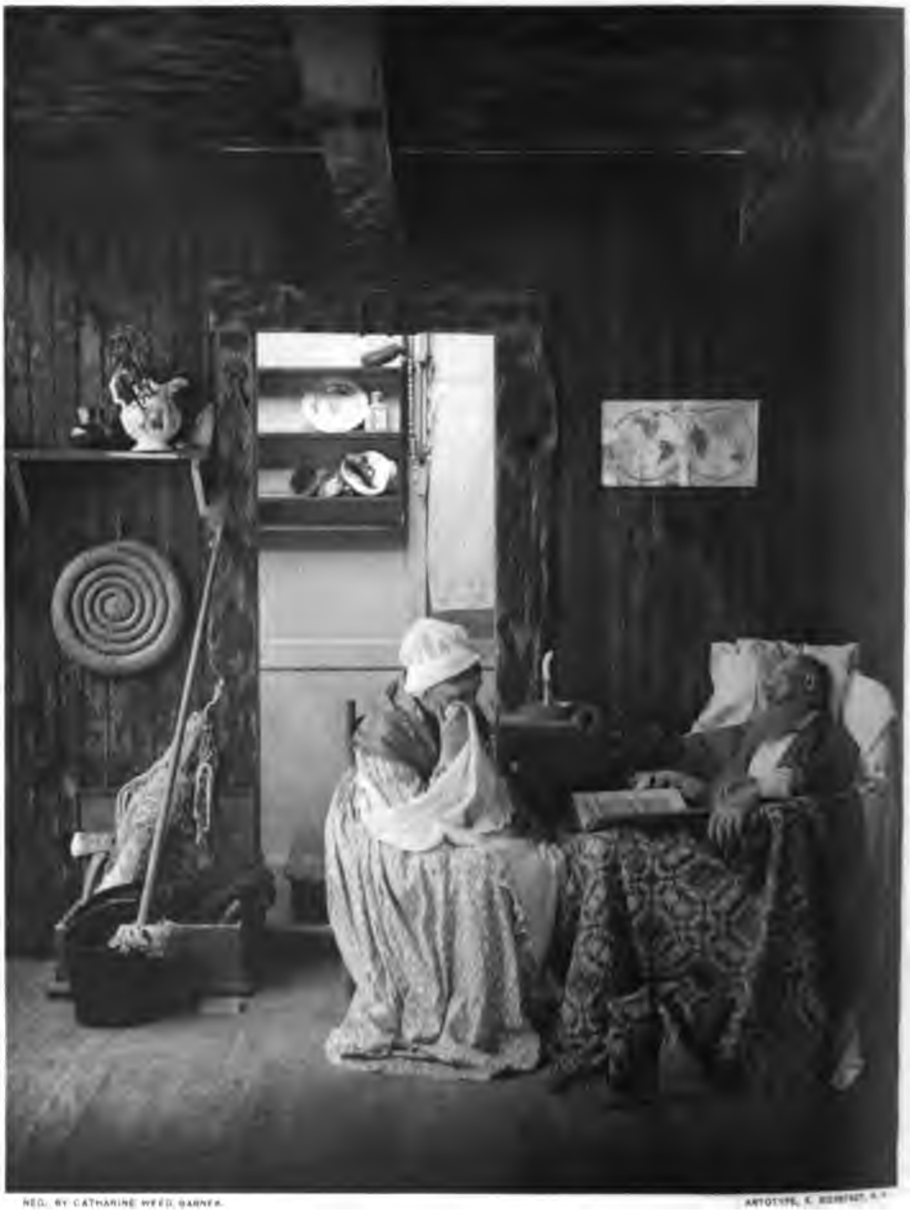

NEG. BY CATHARINE WEED BARNES.

ARTOTYPE, E. BIERSTADT, N.Y.

ENOCH ARDEN.

"Mark me and understand,
While I have power to speak. I charge you now,
When you shall see her, tell her that I died
Blessing her, praying for her, loving her"

THE AMERICAN
AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., NOVEMBER, 1890. NO. 11.

Our Illustration.

WE GIVE this month the third and final picture of Miss Barnes' "Enoch Arden" series. The picture represents Enoch in the cottage of Miriam Lane, after his return from the happy home of Philip and Annie. The originality of pose is striking, and by many this will be regarded as the strongest picture of the series.

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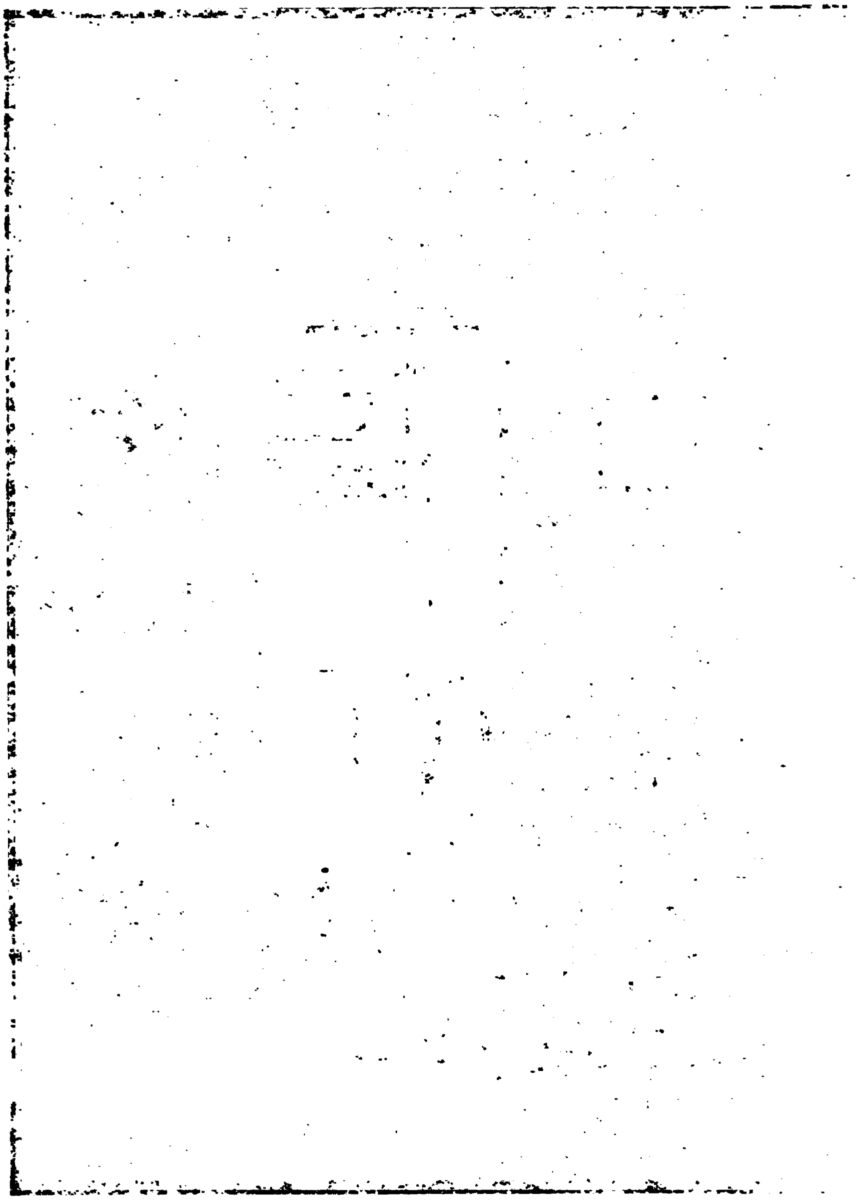
An Institute of Photography.

BY W. H. BURBANK

THE recent mention in this magazine of the advisability of the founding of an Institute of Photography in this country, has called forth so many letters of inquiry concerning the aims, purposes, and utility of such an institute that it seems worth while to say a few words more on the subject. At the outset I will say that in my opinion such an institute would do more to place photography in its rightful position as a serious and dignified subject of study and investigation, than any and all discussions as to its artistic worth or the means of raising prices. Photography has been on the down grade in popular estimation for some time, and to-day it is very widely regarded as a harmless amusement or a very indifferent means of earning a livelihood. It has been degraded by its professed friends. All this would be changed by the establishment of a well equipped and carefully managed school or institute where both the practical and scientific applications of photography were taught in a serious manner, and where the claims of original research were recognized and provided for.

It should be the aim of such an institute to teach photography in all its manifold applications, in science, art, and commerce. No better instance of the many sided character of photographic culture can be cited than that



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It should be the aim of such an institute to teach photography in all its manifold applications, in science, art, and commerce. No better instance of the many sided character of photographic culture can be cited than that afforded by the prospectus of the Imperial and Royal Institute for Instruction in Photography at Vienna, presided over by Dr. Eder. The institute is provided with studios, laboratories, and printing rooms, all thoroughly well equipped. The curriculum embraces instruction in such elementary photographic branches as portraiture, retouching, printing, transparency making and enlargements. Both the wet and dry plate processes are taught, and thorough instruction is given in emulsion making, orthochromatic methods, photomicrography, and all the photo-mechanical printing processes, all of which are taught both theoretically and practically. Attention is also given to the art side of photography, instruction being given in free hand and mechanical drawing and in perspective, with special reference to reproduction by photographic methods.

From all this, it will be seen that the course of instruction includes photochemistry, details of printing processes, retouching, photo-physics, chemical work in the laboratory and drawing. In addition, the institute has a rich store of apparatus and a well stocked library for the use of the students. This brief outline of the work of one successful school of photography shows the rich field open for cultivation here in America, where we have no school with anything like such thorough equipment for the highest work. No one who knows anything of what is being done here with the aid of photography will deny the need of an institute managed on similar lines, and no thoughtful friend of the science will doubt the benefit which would thus accrue to photography in a country where swift and easy methods of reaching results are imperatively demanded.

There is not a subject taught at the Austrian school in which instruction would not be gladly welcomed by many Americans. A scientific knowledge of photography is sadly needed among us, and original investigation needs a place where it can be prosecuted under favorable circumstances. There need be no fear of the success of an Institute of Photography conducted on this broad and liberal basis. As soon as it became known it would attract pupils from all sections. It is not probable, perhaps not desirable, that the school should be managed or controlled by an association, whether of professionals or amateurs, or both combined. Private capital and enterprise, spurred on by hope of gain, would be the best surety of success. An endowed College of Photography would be the best solution of the problem, but that is almost too much to hope for, unless, indeed, some apostle of photography shall arise whose persuasive eloquence shall have power to awaken the enthusiasm of wealthy lovers of our gentle art in aid of the project. Why should not some wealthy amateur endow a College of Photography as Peter Cooper endowed the Cooper Institute? Who will be the Peter Cooper of photography and go down to posterity as the first to see, and with liberal hand meet, the need for an American Institute of Photography?

Lantern Slide Making.

BY C. R. PANCOAST.

[Read before the Camera Club of Hartford, September 23, 1890.]

WHEN asked by your secretary to give a demonstration of my method of developing lantern slides, I felt as though I had no particular method worthy of the name, still, as there is just now so much interest centered in slide making, and since the New England Lantern Slide Interchange will soon begin its operations, I will endeavor to give you the results of my experience as far as relates to the making of gelatine lantern slides.

While I do not consider the gelatine process the best for all classes of negatives, its ease and simplicity, and its especial adaptability to the wants of the amateur, render it by far the most desirable. The results in careful hands certainly rank high, and, in many cases, excel. To the experimenter the wet collodion, the collodio-albumen (Taupenot), and the collodion emulsion processes offer a wide field for work and are capable of producing the finest results. However, as the average worker wishes to see results at once and be sure of them, I will confine my remarks to the gelatine process.

The first essential is a good negative. This should be somewhat thin, full of detail, and of a soft printing quality. It should be as sharp as is consistent with good artistic effect. I am not an adherent of the "fuzzy" school, but I do firmly believe in "focusing with judgment." Unless a negative has natural clouds of such a character as to print well, I prefer a plate having a dense sky, as then the task of printing in a suitable cloud effect is very much lessened.

Given the negative, the next operation is to have it properly illuminated. I have used with success the plan of placing it in a window in such a position as to have the illumination from a clear northern sky. As this requires tilting the camera and thus making it awkward for focusing, I have abandoned that plan and substituted one suggested by Mr. Campbell, late secretary of the Waterbury Society, which is to place the plate about two inches away from a piece of opal glass on which the sun shines brightly. By this means the camera can be set level and brilliancy of illumination secured. It has this disadvantage that, except between certain hours, the light is not constant. A little practice, however, soon accustoms one to the difference and to provide for it intuitively. The variation is due mostly, I think, to the angle at which the sun's rays strike the glass rather than to their variation in power. The negative, having been placed in position, we proceed to focus it on the ground glass of our camera. I will here remark that almost any camera will answer for slide making, provided it has a fine adjustment for focusing and is not too large and cumbersome. In focusing, I recommend the use of magnifying glass as being of great help to the eyes. I use a ½-plate camera, by Geo. Hare, of London, which is admirably adapted to such work by reason of its superior construction, having a fine focusing adjustment and both vertical and horizontal movements to the front-board. Any rectilinear lens, capable of working at F-16, will answer perfectly. I use a Ross Rapid Symmetrical of 7½ focus. To insure an accurately made slide, the only method is to adjust the negative so that its plane is at right angles to, and its center coincident with the axis of the lens. Variations are of course permissible, but such can be made by either moving the negative or by moving the lens. With a front-board permitting of both vertical and horizontal movements, this is the preferable plan. I might here remark that the negative is always to be placed film side toward the lens. A little care just here in properly centering the image on the slide goes a long way toward a pleasing result. Nothing is to my mind more disagreeable and evidence of slovenly working than to see the picture on a lantern slide out of center and crooked. I am perhaps severe on this point for the reason that it is unnecessary, since with even ordinary care the image may be adjusted to the smallest fraction of an inch.

In order to see on the ground glass the proper size and shape, I mark on it in lead-pencil the exact sizes of the various mat openings. This does not interfere with the glass for other purposes. As to plates, one can use their own judgment and preference. Since there appears to be what may be called a personal equation in the working of plates, some can obtain good results on one brand and some on another. For my part, after trying a number of the various commercial houses, I prefer those made by Mr. Carbutt as being the most uniform and giving the best results.

On the exposure of a slide depends largely its character, and the more nearly the time is correctly made, the better the result. I always make trial exposures, and, by using a standard developer, determine the proper period. I work on the principle that the exposure and developer must be in harmony, and that can only be the case when both are right. Therefore, given a standard developer, it is easy to vary the time (if necessary) to get the best results. There is always a little latitude in working which requires no compensation. The ferrous oxalate developer in my hands has always worked well, using the formula as given by Mr. Carbutt:

A.—Potassium Oxide,	8 ounces.
Water,	3 ounces.
Citric Acid,	60 grains.
Citrate Ammonia,	2 ounces.
B.—Sulphide of Iron,	4 ounces.
Water,	3 ounces.
Sulphuric Acid,	8 drops.

C.—Dissolve 1 ounce citric acid in 5 ounces water, and add ammonia to just turn litmus paper. Make up to 8 ounces. For developer take 1 of A. to 2 of B, and 2 or 4 drops of bromide

I always use a fresh lot for each plate. To know just how far to carry the development requires care and skill, and such knowledge as comes only by practice. To a beginner I would say: "Get some slides that are known to be good, and by keeping in mind their general appearance, strive as far as possible to get equally good results." Many beginners in slide making fail, not because they are indifferent workers, but because they do not know just what they want; in fact, do not know just what goes to make a good slide. The best teacher after all is the lantern; then, and only then, can the good or bad qualities of the work become apparent. Let a novice make a batch of slides, and then put them through the lantern, and, if he be observant, he will see and learn more than he could possibly do in any other way.

Some eminent slide makers prefer hydrochinon, and others eikonogen. Each of these new developing agents has good points, and may in one person's hands give better results than in another's. I do not advise experimenting with developers until such time as one is so thoroughly well posted in the detail as to know just what results to expect. My advice is, therefore, select a good formula and stick to it. It is perfectly immaterial to me how and with what material a slide is developed so long as it is good. If it is poor, I do not want to see it at all. I aim at results, and am content to let others do the experimenting. For a fixing bath, I find that given in Cramer's latest formula, using chrome alum and sulphite of soda, to work very well. The acid sulphite bath, as recommended by Dr. Elliott, may be and probably is good, but never having used it, I cannot speak from experience. In case a plain hypo bath is used, it should always be a freshly made solution. I also find, in this case, a subsequent bath of alum and citric acid beneficial. A careful washing in running water completes the operations. In case the washing water is not perfectly clear, I would suggest, before placing the slides in a rack to dry, to swab them over lightly with a tuft of absorbent cotton to remove any particles of dirt that might adhere to the films.

I want to say a few words on the temperature of solutions. It is of the utmost importance to have all solutions and water at a uniform temperature, say between sixty and seventy degrees. In cold weather, when the water is cold, say forty-five or fifty degrees, and the chemicals warm, it is impossible to get good results with pleasing tones; such tones are always cold and gray. This time of the year is perhaps the best for such work, as the temperature is most suitable. After drying, the slides may or may not be varnished. I do not consider it necessary, provided the slides are well and carefully made and stored in a dry place. I have some slides eight years old which are apparently perfect. Coating with plain collodion is an excellent plan. If a varnish is used it should be of a kind suitable to the gelatine films.

Many a good slide is spoiled in matting. To mat and mount a slide properly is such a simple affair that I am surprised there is so much bungling work shown. The mats sold by dealers are by no means perfect and are often an aggravation. The standard commercial mat opening is 2¾ x 2⅞, a most inartistic shape, yet one largely adopted by amateurs. In this matter I have left the beaten track and made a series of sizes and shapes to suit my plates; that is, the length and breadth bearing the same relative proportions as do corresponding parts in my negatives. In this way I simply reduce the composition of the picture to the size of a slide. To compose properly a view on a 6½ x 8½ plate and then reduce it for a slide by cutting off a portion of the ends simply means destruction of the formation of the picture and undoing previous work. For a mat I use a thick enameled paper, black on one side and white on the other. This I get from a paper dealer, cut accurately to size, 3¼ x 4. I usually have my name, subject of slide, date, number, etc., printed on the white side. To make the opening I use a Robinson wheel cutter and a steel form. This form should be about $\frac{1}{16}$ inch thick and carefully and accurately made, the outside to be 3¼ x 4 and the opening the exact size wanted for the mat. By holding the steel form or guide firmly on the paper and using a heavy piece of plate-glass to cut on, a few turns of the cutter will make an opening as clean and perfect as one could wish.

After writing the subject on the white side of the mat, which should always be next to the cover glass and therefore next the condenser in the lantern, the slide is ready to bind. For this I prefer black needle paper, which can be obtained from most paper dealers. It is desirable to have this paper cut into strips of the proper size, that is ⅜ inch wide, by 14½ inches long. Boiled flour paste is, in my opinion, the best material to use for pasting the binding strips. In selecting cover glasses use care and reject all such as have scratches and bubbles, as such are apt to show on the screen.

Last year I had some trouble with an incrustation forming on the covers of a large number of my slides that were made by the wet process. After considerable research I found that this arborescent marking was due to the glass itself, since being of either French or German make, I wasn't sure which, it contained an excess of alkali. This, under the influence of heat and moisture, due to changes in the atmosphere, worked out of the glass and condensed on the surface. It could be easily removed, either by rubbing or washing. Mr. F. York, of London, with whom I had some correspondence, stated that this defect was common to most continental glass, owing to the fact that an excess of alkali made the glass easier to melt and hence less expensive to make. He also said that English glass was free from this defect, a fact that I have since proved. To overcome this trouble with the thin cover glass I boil it for an hour in water and then soak in dilute nitric acid for two hours, wash thoroughly and polish with alcohol. The best glass to use is known as "flatted crown" or Chame's B. P. C. Both makes are English and with such, incrustation is not to be feared.

In conclusion I will say that I have hastily run over the various operations in slide making, and may have omitted some important considerations, but in the main I think I have placed the matter in at least a practical light. It has been wrongly stated, I think, that a good slide for an oil lantern would not be suitable for the lime light. I argue that if a slide is really good it matters little whether oil or gas be the illuminant. With a poor slide an oil light may cover up some of the defects or rather make them less apparent.

There is one point on which I want to say a few words, namely, the subsequent toning or intensification of slides. If properly developed and at a normal temperature, the color of the slide should be a rich brown, a very suitable one for all practical purposes; sometimes with cold this varies to a greenish hue, and with heat to a red. I have found that any subsequent toning or intensification invariably spoiled the slide by changing the structure of the film. The effect may not be apparent to the eye but would show on the screen. I would say, therefore, make the slide right in development and avoid any further operations.

A Collodion Emulsion for Lantern Slides.

BY W. H. BURBANK.

EARLY in the spring of the present year a certain learned professor of my acquaintance and myself determined to go on a still hunt in search of an economical, reliable, and satisfactory process for making slides. What we required was a process capable of giving the highest results at a moderate outlay of time and money, both important items to the amateur. We were both familiar with the different makes of dry plates made and sold for this special purpose, but none of them could be relied on to give the results we wished to obtain, and they were all too expensive, when account was taken of the numerous inevitable failures.

We "harked back" to the very beginnings of glass plate photography, and started in with the albumen process. We spent several weeks experimenting with the process, and finally gave it up on account of the trouble involved in the preparation of the plates and the unconscionable length of time required to develop. The quality of the slides left nothing to be desired, but the method was too delicate for every-day use.

Next we tried wet plates, and without much difficulty we mastered the intricacies of the process and produced many excellent slides. Indeed it is now one of our stand-bys. The Tannin process next engaged our attention, and this also remains a part of our working equipment, easily producing slides which are in many respects superior to the best I have yet seen made on gelatine plates. Taupenot's collodio-albumen process was our next attempt, and had we cared only for results we had probably rested from our labors. In regard to quality, this is almost the ideal slide process, but alas, it is complicated, and development is a thing to try the patience of Job.

It boots not to weary my readers with the details of our six months' search. Suffice it to say, that, after many trials, we found our treasure trove in an old collodion emulsion process, one which a would-be wise critic of one of my own books stigmatized as not only ancient, but worthless. Be that as it may, plates prepared by this method are still an article of trade in England, and there are those who think that the slides made on them have few equals and no superiors, an opinion in which I heartily concur, else I had not spoiled several sheets of paper and burned the midnight oil in calling the attention of the readers of the AMERICAN AMATEUR PHOTOGRAPHER to the process.

When I say that it is Canon Beechey's process, some of my readers will remember having seen the description of it in out-of-the-way corners of certain photographic books, my own, for instance. The process is too good a one not to be generally known, and being free from undue complication, easily and economically worked, and withal exceedingly satisfactory in result, I feel constrained to describe it in detail for the benefit of those who are just adventuring upon the *terra incognita* of slide making. It is an unwashed collodion emulsion, and its method of preparation is of the simplest. The solutions are:

1.—Cadmium bromide (anhydrous), ...	20 grains.
Alcohol, ...	½ ounce.

Dissolve, allow to stand until clear, decant the clear liquid and add

Hydrochloric acid C. P., ...	4 drops.

As this is a stock solution which will keep indefinitely, it is best to make at least eight ounces.

2.—For four dozen slides:

Bromized solution, ...	½ ounce.
Ether C. P., ...	9 drams.
Pyroxyline, ...	12 grains.

Or the ether and pyroxyline may be added in the proper proportions to the desired quantity of No. 1. We found the collodion to possess good keeping qualities.

3.—Dissolve in a test tube with gentle heat:

Nitrate of silver (powdered), ...	40 grains.
Water, ...	20 drops.

And add

Alcohol (hot), ...	8 drams.

No. 3 is added gradually to No. 2, shaking thoroughly between each addition. This addition must be made by yellow light, and the emulsion is allowed to ripen for twenty-four hours, when it will be thick and creamy. Before being used the emulsion should be well shaken and filtered through wool into a clean bottle.

The plates are thoroughly cleaned and given a safe edge of rubber gum dissolved in chloroform or benzole. The coating is done as with wet plates by holding the plate by the lower left-hand corner between the thumb and finger of the left hand. A pool of the emulsion is poured on the middle of the plate which is gently tilted to cause the emulsion to flow to the right-hand upper corner, then across the top and down to the bottom, the excess being poured off from the lower right-hand corner into a second bottle from which it is filtered back into the stock bottle. Each coated plate is washed in clean water until all traces of greasiness have disappeared, and then immersed for five minutes in the following preservative:

Stale beer,	30 ounces.
Pyro,	30 grains.

The solution is filtered before using. After this treatment the plates are racked away to dry. If kept in a dry place the plates will retain their good qualities for several weeks.

For contact printing the exposure in diffused daylight is only a second or two, and the plates are developed in any good alkaline developer, having been previously rinsed under the tap to remove the preservative.

Canon Beechey used the following developer:

1.—Pyro,	96 grains.
Alcohol,	1 ounce.
2.—Bromide of potash,	12 grains.
Water,	1 ounce.
3.—Carbonate of ammonia,	64 grains.
Hot water,	1 ounce.

For the developer, take of Solution 1, thirty drops; Solution 2, sixty drops; Solution 3, two drams.

The plates develop well in a soda or potash developer in combination with pyro, hydro, or eiko. Our favorite developer is the following with soda and hydrochinon:

1.—Hydrochinon,	12 grains.
Sulphide of soda,	90 grains.
Water,	1 ounce.
2.—Carbonate of soda,	60 grains.
Water,	1 ounce.

To develop, take Solution 1, two ounces, Solution 2, one ounce, with a little bromide.

The plates fix almost instantly, and when washed and dried are of a pleasing brown tone and extremely clear and brilliant.

In conclusion, let me advise my slide-making readers to make a trial of this simple method before they order a stock of gelatine plates for winter use. My word for it, they will not regret the experiment, and with a moderate amount of skill they will be able to turn out slides which will be things of beauty at a tithe of the expense of the gelatine process.

Doctoring Negatives.

BY ROBERT E. M. BAIN.

COMPARATIVELY few amateurs know the necessity or advisability of retouching their negatives to obtain the best prints they are capable of making. Most negatives would give much better results by a little judicious doctoring. Still, it is better not to touch them at all than to overdue the improving process.

A few touches here and there will often make a remarkable change in the finished picture. Many objects, in shadow for lack of light to bring them out, prove a detriment, but which, touched up a little here and there, add greatly to the general *tout ensemble*.

Unless the amateur has had considerable experience in lining and retouching landscape work, he should only attempt it with a finished picture as a guide. Should there be a figure in an outdoor picture, the hair, if exposed to the bright light from above, is usually perfectly white by reflection, and generally produces a somewhat startling result in the print. If the subject's hair is dark the effect is more noticeable, as the print then shows a white spot on the top of the head, surrounded by a black hair fringe. This, in the case of the "priest all shaven and shorn," might appear to advantage, but to a young lady, with raven locks, as the victim, the effect would hardly be properly appreciated.

Now, in some cases, it is impossible to screen the undesirable light from the subject, and the young lady may object to covering her head, hence it is necessary to thin down the black spot produced in the negative. This is easily accomplished with a little of your stock ferri-cyanide of potassium solution (1 oz. to water 16 oz.), saturated with hypo. While the negative is wet take a camel's-hair brush, and, holding the negative level, dab the spot to be thinned with the brush, previously dipped in the solution. Immediately rinse the negative off under the water-tap. If, on examination, it is found not sufficiently reduced, repeat the process. Ferri-cyanide in solution deteriorates very rapidly in daylight and the stock solution bottle should be kept wrapped up in dark or yellow paper.

All over-dense portions of a negative may be reduced in this manner. Parts of the negative injured by halation of bright objects can be very successfully treated in this way. Should it be necessary to thin a portion of a negative, and the negative be dry, or the ferri-cyanide solution not at hand, take a piece of flannel, dip it in alcohol, and rub the part to be thinned. It will accomplish the same result without injury to the film. India ink and a medium hard lead pencil will generally cover any further defects. Note in the print where a high light would prove beneficial and trace the part with ink, or rub a little gum turpentine on the spot and retouch with the pencil. Where bright round or cylindrical objects are to be taken, the high lights nearly always prove defective in the photograph. A little retouching with the pencil will usually mitigate the fault. Defective skies are best remedied by pasting a piece of tissue paper on the back of the negative, covering it entirely. A little powdered charcoal applied to the paper with an artist's stump, covering the sky portion of the negative, will generally prove the remedy. These are but a few hints for the uninitiated, but may be the salvation of a negative much wanted, but defective.

Modern Methods of Illustration.

By W. H. Burbank.

THE PHOTOTYPE PROCESS.—Continued.

INKING UP.—The usual practice of phototypists is to allow the plate to dry and harden after the elimination of the bichromate before proceeding to the inking up, but this is not necessary with the method now under discussion. After a brief immersion in water to remove the greater part of the bichromate, the plate is rendered surface dry by gentle dabbing with a piece of soft linen, care being taken to avoid a rubbing motion which would be apt to scratch the film. Those portions of the film which are to print white must be sufficiently damp to repel the greasy ink. These portions having been protected from the insolubilizing action of light by the blacks of the negative retain their property of absorbing water, while those parts which were influenced by light are hardened to such an extent as to refuse to absorb moisture. Consequently they take the ink from the roller and under the pressure of the press, give it up to the paper, thus forming the image. The secret of good phototypic printing consists in having the plate in just the right condition of dampness to give clean whites and good half-tones. If the plate is too damp, it will not take the ink well and half-tone will be lacking. If, on the other hand, it is too dry, it will take the ink too greedily and the prints will be heavy. A little practice will teach more on this point than pages of written description.

The rollers in most common use by phototypists are the grained rollers of the lithographic printer and the composition rollers used in ordinary type printing. The former must be "made," as the expression is, before they can be used, that is, they must be made to absorb all the varnish possible before they will take ink well. It will be best to purchase the grained leather rollers already "made." The composition rollers must be free from imperfections, and the ends should be rounded off in order to prevent markings in inking up. The grained rollers are used to distribute the ink, the gelatine rollers are for clearing up the image. For experimental work, two or three good composition rollers will answer quite well.

The ink used in phototypic printing is finely ground litho ink, and may be purchased of most dealers in printing inks. It should be stiff and smooth. A very small quantity of ink is sufficient to ink a photoype film. A piece not larger than a pea is taken on the ink knife and placed on the inking table, which may be a sheet of stout ground glass; a drop or two of middle varnish or sweet oil is added, and the mass well worked with the knife. When the ink and the oil are thoroughly incorporated and spread as evenly as possible over the inking slab, the grained roller or one of the compo rollers is rolled over the slab in all directions until a thin, even coating is secured. The amount of ink on the roller should be exceedingly slight, and in order to make sure of this, it is well to run the roller several times over a clean inking slab before proceeding to ink up the film.

The actual practice of inking up is not difficult, but it requires some little practice and skill. Two points in connection with the inking must be borne in mind. A slow motion of the roller, with considerable pressure, deposits the ink on the film. A rapid, light motion removes the ink from the film. With the grained roller or one of the compo rollers the film is given an even coating of ink by rolling slowly and with pressure from top to bottom. If the plate is in good condition, the effect of this will be to cover the plate evenly, with rather more ink on the details than on the whites. Now with one of the clean compo rollers go over the plate lightly and quickly. Unless the plate is too dry or over-exposed this will clear the whites and leave the image well defined in ink. A sheet of clean paper is laid smoothly down on the film, covered with two or three sheets of blotting paper and a thick sheet of felt and the whole placed in a letter copying press. A good pressure is applied and allowed to "dwell" for a few seconds. The plate is then removed from the press and the paper carefully removed. If the plate is right, all the ink should adhere to the paper, leaving the former clean for a second inking.

If the trial print shows a lack of detail, the plate is probably too damp. In this case the film should be covered with a sheet of paper and put under the press, in order to move the extra moisture. The same fault is also caused by the ink being too thick, thus making it impossible to feed the half-tones. It is generally advisable to use two grades of ink; one for the first inking, a thick black for the shadows, the second a thinner ink of the desired color or the half-tones. A separate roller is used for each ink.

If the trial print is heavy and over-charged with ink, either the film is too dry or the ink too heavy. In the former case, allow a mixture of gelatine and water in equal parts to stand on the film for a few moments, wipe the surface dry with a soft sponge and the linen rag, and ink up. If the same fault appears in the second print, thin the ink a trifle. A phototypic plate will rarely give a good impression until a dozen or more prints have been pulled: hence it is well not to be in too great a hurry in condemning a plate, or in adopting any of the modifications suggested above.

If the experimenter is in a position to obtain a few lessons from an experienced litho printer, he will soon master the art of inking a phototype image sufficiently for experimental work; the rest is a matter of practice.

Owing to the fact that the plate loses a portion of its moisture with each impression, it is necessary, now and then, to restore to it its original condition. This is done by dipping a soft sponge in the glycerine and water mixture, squeezing it rather dry, and passing it over the film, which is then dried with the linen rag. The frequency with which this damping must be done depends on the film, the hygroscopic condition of the air, and the quality of the paper. As soon as the whites become difficult to clean with the roller, damping must be resorted to. Care must be taken, however, to avoid excessive damping, as the moisture is apt to penetrate through the film and cause it to leave the metal support in blisters, thus ruining the plate. In any event, probably not more than a hundred impressions can be pulled from a plate prepared by this formula. Those who wish to obtain a more durable plate must adopt the method with plate glass support, which will be described later, the purpose of this introductory paper being simply to describe a not too complicated method of experimenting with the process before approaching the higher branch of the subject.

Clean Margins.—If the prints are to be made with margins for binding in books, it will be necessary to adopt some special precautions.

The edges of the negative should be masked with strips of tin-foil, in order to prevent the light from acting on the film in those portions. But this is not sufficient to secure clean margins in the prints. For this purpose it is necessary to cover the film with a mask having an opening of the size and shape of the image to be printed. Nothing is better for this than stout bank note paper coated with a mixture, in equal parts of boiled oil and gold size, and dried.

When the plate is inked up, one of these prepared sheets is laid down on the plate and an impression taken. That portion of the image which it is desired to print is cut out with a sharp knife, care being taken to have the corners square if a rectangular opening is used. The mask thus made is laid down on the film after each inking and before the printing paper is put in place. In order to secure accurate register, the mask should be larger than the sheets to be printed and marks should be drawn on it in order to have the image register in the center of the paper.

The Press.—For initial experiments a simple letter copying press answers very well, but for more serious work a small hand litho press or a horizontal bed type press should be used.

Cleaning the Plate and Rollers.—The plate and rollers should be cleaned with turpentine when the day's work is done. Turpentine must also be used to clean the plate during printing whenever ink is left on it after the impression. When turpentine is used for this purpose the plate must be dampened before inking up.

Careful attention to the details thus far given will enable any one with a moderate degree of manipulative skill to produce fairly successful phototype prints at a modicum expenditure of time, labor, and money. More advanced methods will be described in later papers.

WOMAN'S WORK.

EDITED BY MISS CATHERINE WEED BARNES.

The Question of Expense.

BY MISS CATHERINE WEED BARNES.

PART II.

AN amateur friend of mine recently said that hearing me talk of my garden studio was enough to discourage any one less fortunate than myself. The remark was called forth by my expressed intention to lengthen the building nearly eight feet, making it thirty feet eleven inches. Of course good tools are always more desirable than poor ones, and, after working in a roomy studio, it would be very hard to work by side-light or outdoors. But it is not necessary that every amateur should make portraits. To do them well requires not only a special education but a natural gift, and the desire to do it does not imply that such a gift exists. Persistency, therefore, in a mistaken field of work may prevent great proficiency in another. Don Quixote said that he might have made excellent toothpicks if his brain had not been filled with ideas of chivalry. Better, by far, excel in landscape, marine, flash-light, or snap-shot work, than struggle over portraiture, which can never be more than tolerable except under proper conditions. These are a sky-light studio, portrait lens, camera, and stand, besides a good shutter. Even with these, there is a world of small details to be considered which may seem trifling to many, but trifles, as Michael Angelo said, make perfection, and perfection is no trifle. In these the brain can largely save the purse, and often the most effective picture is made so largely by one's own ingenuity.

In my Enoch Arden studies I utilized one background for two pictures by simply reversing it, inserting a window from another one, and fitting in a door. Articles for the press are continually being published, in which it is stated that photography is a "pastime," needing little expense or trouble, and it is a fallacy, against which it is impossible to speak too strongly. If, with the most valuable instruments, much and constant study is required, still more is needed to supplement deficiences in one's outfit. To those who are not willing to put their brains into such active service, I have nothing to say; they are not likely to read any more than work. There is a great satisfaction in overcoming obstacles, and, while not undervaluing the advantage of owning the best instruments, I do believe that, sometimes, one depends too much on them and too little on one's own mental originality.

Wearied of continually needing a carpenter's services in altering and repairing my numerous camera appliances, I have decided to set up a small carpenter's shop and do all but the heaviest work myself. Many women are natural mechanics, and such practice is both pleasant and useful. It is a good plan, when buying a new camera, tripod, or lens, to thoroughly study its different parts and thus be able to, in an emergency, supply deficiencies, not feeling obliged to depend on outside help.

Then, with regard to made developers, I do not think pyro keeps so well as eikonogen, and, in that, is less economical. Make up a solution, by hydrometer, of sulphite and carbonate of soda in separate half gallon bottles, and in a third one put ten grains of oxalic acid to the ounce of pyro with twelve ounces of water. Two ounces of pyro will make a solution that will last about a month, but I do not like to keep it longer. A less quantity of the solution, with a little dry pyro put in occasionally, is, perhaps, better. Under-exposures can be satisfactorily treated with eiko when pyro would fail, the plates can stay longer in it without danger of fog, and over-density can be reduced by using acid-sulphite in the hypo. Great care is necessary in keeping the solutions filtered and in buying pure chemicals. Cleanliness and order in the dark-room will materially lessen expense, and, by experimenting, one can sometimes chance on expedients to economize time, labor, and money.

As the eager learner works on and is gradually led into the mysteries of chemistry it seems at last as if, at the very entrance of the dark-room, one confronts the Sphinx with silence on her lips and an eternal "why" in her sightless eyes. It is often difficult, in this world, to trace the connection between the most careless action and its final result, such myriad ramifications exist between cause and effect, like the human nervous system with its intricate interlacings. Therefore, in taking up such an occupation as photography, it is well at the outset to make it magnify its office. *Begin right*, and do not spend precious hours in trifling with what can be of such positive assistance to you as an educator if you take hold of it in earnest. Get more out of it than a quantity of pictures; let it educate your mental and moral nature and the more you believe in its possibilities the more benefit will be derived from it.

Camera work is divided into the preparation of the negative and of the finished print. For the latter albumen paper is perhaps the most used, but there are a score of processes growing in favor as being more artistic. The best albumen paper is imported and the duty on it has recently been increased twenty per cent. Bromide and platinum papers are made in this country, but the price of platinum has more than doubled in a few months. It is a beautiful process and worth careful study, the prints being softer in tone than bromides and much better for portrait work. It is exposed in the same manner as albumen paper but the image appears faint until brought out with oxalate of potash and an after bath of muriatic acid and water. Ready sensitized paper can be bought, costing seventy-five cents per dozen sheets of 5x8's, one dollar and fifty cents for 8x10's, and larger sizes are made to order. Bromide paper is much cheaper. What are called plain prints are often very effective and admit of considerable latitude in tint. The paper can be bought ready sized, but requires a coating of nitrate of silver before using. This can be applied with a tuft of absorbent cotton and the paper is then dried and fumed with ammonia. The printing and toning are the same as with albumen paper. It is not expensive, only as much being silvered as is required for immediate use. Chloride of gold costs fifty cents per bottle for fifteen grains. The solution will last for some time, with occasional slight additions of the fresh gold to the old solution. Albumen and plain prints require hypo, but platinum and bromide prints need no fixing. Ferro-prussiate paper, to be really satisfactory, should be prepared when required, as it does not seem to keep well. The old carbon process is coming into use again and its beauty and permanency render it a valuable printing method. I have seen prints, made over thirty years ago, apparently as clear and perfect as at first, while we are all familiar with the tendency of albumen prints to turn yellow.

It is cheaper in the long run, where one takes up portraiture as a special study, not to always try to make one's own prints, but to concentrate the attention on getting a good negative, then send it to a reliable professional for printing and let the sitter order direct from him. Right-minded people will prefer this to your bearing all the expense, besides giving you time and trouble. This, however, opens up the vexed question as to amateurs receiving compensation for their work. The point should be seriously discussed and settled at the proposed convention of amateurs in New York this winter. To my mind a professional is one who practices photography as a regular daily business;—or "profession," not that he receives remuneration for it. An amateur who, as a general thing, would only occasionally receive compensation is, it seems to me, entitled to it. Because a man or woman is a professional it does not follow that the work is good nor that the amateur should be considered as, necessarily, doing poor work. It is not always a compliment to be told that your work is quite professional, and it may mean that the purely technical qualities decidedly over-balance the artistic. People are not apt to think any more of prints you make, it takes considerable time and expense for amateurs, generally, make so few that they waste more material than a professional and thus, besides saving time and expense, you can devote more thoughtful care to your sitters. One should, however, learn to make prints, so as to do it when desired. This applies especially to albumen prints, for platinums and bromides, as well as plain prints, can easily be made at home. Carbon work calls for more appliances, but those who do this work are so enthusiastic about it that one is tempted to believe the game is decidedly worth the candle. In fitting up a dark-room, laboratory, or studio, thought and care will render unnecessary many expenses usually incurred and, although the articles made at home may not look so well as the purchased ones, remember that they are only intended to do certain work and, while polished wood and brass work is all very well, they do not really assist materially in the desired result.

In all this I have said nothing of lantern slides. This work can be done most cheaply by contact, but the slides thus made never seem to me so desirable as those made by reduction, and this requires a special camera or a re-arrangement of the old one. Mine admits of working with any size negative up to 11 x 14 but it takes up a great deal of room even without its long cone. It has an attachment at the back to use a ground glass of slide which can be slipped aside when the holder takes its place. Any lines not perfectly straight in the negative can be corrected on the slide by swinging the ground glass on a pivot, and judicious matting does the rest. This instrument was expensive, but one has been shown at the rooms of the New York Society of Amateur Photographers which cost the maker one dollar and a half without the lens.

In conclusion let me say that, in point of economy, the amateur landscape worker is better off than the portraitist or interior worker, he needing but two lenses at the most, while the portraitist needs several. People often demand more from an amateur, especially in this branch of work, than a professional would think of attempting, and the most experienced would hesitate longest, as best realizing the difficulties before him. It is disheartening to be asked to do work that you know beforehand will be a failure, but doubting Thomas still walks the earth and you must show him the finished print before he understands that you knew best. One amusing thing is; that, ten to one, after the work is done he will criticise it, and compare portraits taken in the glare of the sunlight with softly-lit studio work. I consider portraiture as the most expensive branch of photography and can speak feelingly on the subject, having five of the best lenses made, besides backgrounds and other articles. For interiors it is well to have two wide-angle lenses for large and small rooms respectively, and an ordinary view camera. You would be wise, therefore, to decide, if expense is the first thing to be considered, which particular branch you will follow and stick to it. Read everything on that subject you can procure, "read, learn, and inwardly digest it." If unable to subscribe for a good periodical, consult those in some camera society library or borrow from friends but, at any rate, "get understanding." Let me urge also, again and yet again, the absolute necessity of faithful, conscientious work, slighting no part from first to last, bearing in mind the lines:

> "In the elder days of art,
> Builders wrought with greatest care
> Each minute and unseen part;
> For the gods see everywhere."

The Carbon Printing Process.

BY T. C. ROCHE.

[Paper and Demonstration before the Society of Amateur Photographers of New York, Oct. 14, 1890.]

THE fundamental principle of the carbon process lies in the fact that bichromate of potash combined with organic matter, soluble if kept in the dark, becomes insoluble upon exposure to light.

This discovery was first brought to public notice by Mungo Ponton, in 1839. M. Becquerel Fox Talbot and many others experimented with the newly discovered action of light, but it was reserved for M. Poitevin, in 1855, to bring the process to any practical issue. Poitevin mixed coloring matters with bichromatized gelatine, and laid the foundation of the lithographic and photomechanical printing process now universally adopted.

The first to produce commercially workable carbon tissue and practical formulas was Mr. J. W. Swan, who patented his method in 1864. Since then several simplifying improvements have been made, and now suitable paper in long rolls, coated with pigmented gelatine, is an article of commerce. This paper is cut to the required size and sensitized in a solution of bichromate of potash—water, one ounce, bichromate, 15 to 20 grains. After drying in the dark-room it is ready for exposure behind the negative. Negatives for carbon printing should have an opaque border about one-half an inch wide to prevent the action of light upon the margin of the tissue. In this way an edging of soluble tissue is obtained which prevents the tearing or washing off of the film during development. The exposure is by no means the easiest part of the process, as the effect of the light is invisible. A photometer is therefore used and each negative may be marked with numbers corresponding to those on the photometer.

Coat a piece of clean glass or porcelain with plain collodion, and wash it in water. Lay it in a dish of cold water, and place the exposed tissue, coated side downward, in the dish until it lies flat and limp. Raise the glass and with it the paper, lay on a flat table, cover with a thin rubber cloth and pass a squeegee over lightly to drive out the air-bells and to insure perfect contact. Allow to remain for a few minutes, and then immerse in water at a temperature of 110 to 120 degrees Fahrenheit. Rock gently. The first portion of the gelatine to dissolve is that which has been protected by the safety edge, and after a short time the paper that supported the film can be peeled off. The glass is now covered with a colored mass, and all that is necessary is to wash with the tepid water until development is complete. The picture is now plunged into cold water and then into a dilute solution of alum. Now wash and dry, and the process is complete. While the surface is wet it is very tender, but it will dry hard and sharp. The collodion is used to prevent the washing away of the delicate details or half-tones. Special transfer paper may be obtained for use instead of glass or porcelain. Sensitized tissue will keep for about two weeks if kept in an air-tight box.

Prints treated in the above-described way will show the pictures laterally inverted. To obtain a non-reversed picture, the tissue is developed on waxed collodionized porcelain or zinc plates, and allowed to dry after squeegeeing down the final support. This latter is peeled off and the picture comes with it, readily leaving the temporary support.

Pictures for lantern slides or for porcelain should not be printed deeply, while those for window transparencies should have full exposure. It will readily be seen that by this process pictures may be obtained on almost any material, wood, celluloid, metals, etc.

One thing is of importance. After sensitizing, the tissue should be allowed to dry in a room well ventilated. Otherwise the coating is apt to become insoluble, and consequently useless.

Carbon pictures are considered to be absolutely permanent, and indeed they are so if proper pigments are chosen for admixture with the gelatine.

At the close of his paper the veteran photographer gave a highly successful demonstration of this beautiful process, the details of which and the discussion which followed will be found in the report of the Society of Amateur Photographers and in the present number of the *Bulletin*.

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THE

AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

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EDITORS:
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EDITORIAL COMMENT.

To Our Subscribers.—The strength of any magazine is in its friends, and its ability to render the best of which it is capable is measured by the size of its subscription list. A goodly number of new subscriptions received each month brings cheer to the heart of the editor and spurs him on to renewed efforts in his readers' behalf.

The AMERICAN AMATEUR PHOTOGRAPHER has been established long enough to show its temper and to give some indication of the aims of its founders and conductors. It has, we think, on the whole, been faithful to the promise of its initial number. It has had no private ax to grind, and it has aimed to show equal favor to all.

It is not a gift enterprise; it is not sown broadcast regardless of its subscription list or its regular monthly sales. It recognizes the fact that photography is not merely a collection of formulas, and that a magazine, in order to be representative of the best there is in photography, must not only tell the workers how to work, but must also give the tangible results of their work in the form of illustrated sketches of wanderings with the camera. In a word, it must be something more than a technical store-house; it must be a constant source of inspiration to better work, a leader in the gradual approach to a higher standard, and a better way of working with the camera.

All this the editors have sought to make this magazine, which has made its way with no undue advertising of its own merits and with no words of detraction of its contemporaries. They have earnestly striven to give, month by month, helpful and timely words of counsel and advice, and they have the satisfaction of knowing that their efforts have not been in vain.

But they venture to ask the friends of the magazine to show their friendship not only by words, but by seeking to induce others to subscribe. A little effort on the part of our readers would materially increase our subscription list and so enable us to make the magazine for the coming year better and more helpful.

Examinations in Photography.—In connection with the article on "A Photographic Institute," which appears in this number, we give here, as showing the practical character of such an institute, the examination subjects in photography of the City and Guilds of London Institute.

ORDINARY GRADE.

1. The characteristic properties of pyroxyline for the manufacture of collodion, and the various substances employed for the purpose, as well as the solvents. Different qualities of collodion.
2. The wet process, dry-plate processes, processes with the silver bath, gelatine and collodion emulsion processes, and the principles involved in each.
3. The theory of development by the acid and alkaline methods. The theory of intensification.
4. Printing in silver and other metals. Toning and fixing. Carbon printing.
5. The Collotype and Powder processes. Photo-lithography.
6. General principles of portrait and landscape lenses. The principles of construction of cameras.
7. The various apparatus in ordinary use by photographers.

HONOR GRADE.

In the Honors Examination, more difficult questions will be given in the above subjects, and, in addition, a knowledge will be required of:

1. The Dagurreotype and Calotype processes.
2. Woodburytype, Stannotype, Vitrified Enamels.
3. Special applications of photography to engraving; typography.
4. Special applications of photography to astronomical and microscopical purposes, as well as for recording meteorological and other observations.

Can any one doubt that a School of Instruction where all these subjects were thoroughly taught would be greatly beneficial to photography with us?

What Might be Done Were "Barkis Willin'."—Col. Albert A. Pope, of the Pope Manufacturing Co., has recently offered to provide the Massachusetts Institute of Technology with a sum of money, not exceeding $6,000, to maintain a special course in highway engineering. This generous action suggests the possibility of some generous-minded amateur endowing a professorship of photography at some of our leading colleges or technical schools. Fifteen hundred dollars a year for five years would be ample to start with, and we are confident that the results would justify the outlay.

Annual Exhibition of the Lowell Camera Club.—The Lowell Camera Club will hold its second annual exhibition at Morrill's Studio, Central Block, Lowell, November 11th to 15th inclusive. Diplomas will be awarded for artistic, scientific, and technical excellence in the following classes of work:

1. Landscape or marine views.
2. Portraits.
3. Animals.
4. Genre subjects and figure compositions.
5. Enlargements.
6. Lantern slides (sets of six) and transparencies. Negatives and positives by exhibitor.
7. Applied photography, scientific or technical.

All amateurs of Lowell and vicinity are invited to contribute samples of their work, whether members of the club or not.

Hydrochinon Developer for Lantern Slides.—At a recent meeting of the North Middlesex Photographic Club Mr. Beadle read an interesting paper on slide making and recommended the following developer:

Hydrochinon,	160 grains.
Sodium Sulphite,	2 ounces.
itric Acid,	60 grains.
Potassium Bromide,	30 grains.
Water, to make up to	20 ounces.

For the second solution:

Sodium Hydrate,	160 grains.
Water,	20 ounces.

Equal parts of the two solutions form the developer.

Advice to Amateurs.—Mr. Lydell Sawyer, whose pictures are now on exhibition at the Camera Club, London, has an interesting communication on photographic art, in the October *Journal*, from which we reprint the following bits of sound and sensible advice: "Individualize your work, even at the expense, if need be, of technical excellence; fight for your right to be accounted an artist by showing artistic evidence—your own creating in the pictures that you take. Do not be content with the bare mechanical process of portraying what approaches in itself a complete scene; any beauty there is in a picture of this kind is not yours, beyond the feeble merit of selection, and to claim credit for it is a mild form of piracy or imposition on the credulity of the uninitiated. Do not look through a telescope to find expanses of panoramic scenery for your camera, which, as a rule, are entirely beyond the modifying control; rather look just beyond your own length for subjects. There is more merit, more material, and a better photographic picture to be got out of the ingredients afforded by a rustic lass, a shabby pool, with a few rushes straggling through it, and two or three portable bits of rock lying around, than from all the Martin-like plains and grandest Alpine scenery in Europe.

Warm Tones in Lantern Slides.—Mr. P. W. Christian recently stated before the Liverpool Amateur Society that he obtained warm tones in dry-plate slides by the following method: After development, the slide is bleached in a 1 to 20 solution of bichloride of mercury, well washed and toned in the following bath:

A.—Water,	14 ounces.
Hypo,	3 grains.
Sulphocyanide of ammonia,	40 grains.
B.—hloride of gold,	5 grains.
Water,	2½ ounces.

Two ounces of A and one-half ounce of B form the bath. The tones vary from yellowish-brown to purple and black according to the length of time the bath is allowed to act, and the proportionate amounts of the ingredients present. An increase in gold gives particularly warm tones. An increase of hypo produces yellowish tones, and an excess of the sulphocyanide gives brownish tones.

While we have not tried this special formula, we have no doubts from former experiments with toning on similar lines that it is practical, always remembering that chloride plates are more amendable to toning action than bromide.

Sulphur Toning of Collodion Slides.—The warm luminous brown, which is a marked characteristic of the best French slides, may be very closely approached with collodion by toning them in a very weak solution of sulphide of ammonia. The solution has a decidedly unpleasant oder and the toning had best be done in the open air. The sulphide has a slight intensifying action, which makes it necessary to stop the development before sufficient density is obtained. Sulphide of silver is formed in the film, and, being a stable compound, there is not much reason for apprehending a lack of permanency in the slide.

Lantern Slides in Blue.—Coat a plate with plain collodion, and when the collodion is set, immerse for ten minutes in equal parts of citrate of iron and ammonia 1 ounce, water 8 ounces; ferri-cyanide of potassium 1 ounce, water 8 ounces. Expose for about twenty minutes in bright sunlight, and develop by washing in clean water.—*Quinol in Photography.*

The Diazotype Printing Process.—At a recent meeting of the Photographic Society of Great Britain, Mr. Green demonstrated the working of a new printing process, based upon the facts that the diazo-derivatives of primuline, a coal tar dye, will combine with the various amines and phenols with the production of certain colors, and that the diazo-derivative is decomposed by light. The material to be treated is immersed in an aqueous solution of primuline, and the dye-stuff is diazotized by then immersing the material in a solution of an alkaline nitrite acidified with acetic acid. The fabric is now sensitive to light, and when exposed under a transparency the parts acted on by light become lighter in color. Various colors may be developed by immersing the fabric or paper in solutions of the amines or phenols. Betanaphthol gives a red image, resorcin an orange, alpha-naphthalamine-hydrochlorate a purple, and alpha-naphthol-disulphonic acid a crimson image. By applying different developers with a brush, various colors were obtained on the same ground which, after washing, remains of a primrose yellow color. Paper may be prepared by floating it on the various solutions or by brushing them on. One minute's exposure is stated to be sufficient, and the images give every promise of permanency. Further details of this interesting process will be found in this month's English Notes.

The Proposed National Association of Amateur Photographers.—If the Syracuse Camera Club meets with success in its well meant effort to bring about a convention of American amateurs, the result will probably be the formation of a national association, a project which we have long had at heart and which we would do much to promote. The almost universal employment of photography for pleasure and as an aid to scientific research, makes it almost a matter of course that all who are thus interested should combine to promote and support an organization designed solely to arts as a pleasure and a science. This can be better accomplished by amateurs than by professionals, to whom photography is a means of livelihood. While the majority of our American amateurs follow photography simply because of the pleasure it affords them, there is a not insignificant number of earnest workers who use it intelligently as a serviceable aid to scientific research. These would form a band of workers and experimenters to whom might be entrusted the task of experimenting with and reporting upon new methods and promising applications, and in this way the proposed association might do much in placing photography in its proper position before the public, to whom it is simply a ready means of taking more or less indifferent pictures.

One of the aims of such an association might well be the establishment of a "Photographic Institute" for experimental and educative work. The need of such an institute is pressing, and with proper management it would soon be self-supporting. Then of course there would be an annual exhibition, bringing together the best work of our best workers, the value of which as an educator of the artistic faculty can not well be over-estimated.

As the only amateur magazine published in the country, we naturally take a deep interest in the project and wish it immediate success. We commend it to our readers, and, as a possible help to the projectors, we invite correspondence on the subject from our readers. Those interested in the matter should apply to Mr. Arthur P. Yates, President of the Syracuse Camera Club, Syracuse, N. Y., for further information. We wait further developments with interest.

Corrected Formula for Developer for Lantern Slides.

The Following was Received too Late for Insertion in Mr. Pancoast's Article.—

A.—Oxalate of Potash,	8 ounces.
Water,	30 ounces.
Citric Acid,	60 grains.
Citrate of Ammonia Solution,	2 ounces.
B.—Sulphate of Iron,	4 ounces.
Water,	32 ounces.
Sulphuric Acid,	8 drops.

C.—*Citrate of Ammonia Solution.*—Dissolve 1 ounce of citric acid in 5 ounces of distilled water; add liquor ammonia until a slip of litmus paper just loses its red color; then add water to make the whole measure 8 ounces.

To Develop.—Make developer by adding one ounce of A to 2 ounces of B and ½ ounce of water, and 3 to 6 drops of a 10 per cent. solution of bromide of potassium.

I would earnestly recommend the use of C. P. chemicals and distilled water in compounding these formulas.

Honor to Whom Honor is Due.—In the October installment of the Index Rerum Dr. Janeway credits Wall's Dictionary with a valuable table of view angles there given. The table in question was compiled by the Rev. Clarence H. Woodman, and published in the *Photographic Times* five years before Wall's Dictionary was published, and to him belongs the credit which we are glad to give him here.

* * *

INDEX RERUM PHOTOGRAPHIC.

By Dr. John H. Janeway, U. S. A.

[Continued from page 402.]

will allow a good rise of the camera front, for cutting off foreground and getting a high roof on the plate. For interiors use a plate containing plenty of iodide, and having a thick yellow film, and thus escape, in a great measure, halation.

Area of Aperture, The—Guides and regulates the photographic action. If too much diminished, not only the time of exposure becomes irksome, but the picture suffers, and there is a harsh and unnatural edgishness produced. If, on the other hand, it is allowed to be too great, the oblique pencils of light which should have been corrected interfere with the perfection of the image, and distorted forms and musty outlines are produced.

Argentum—See silver and its salts.

Aristotype—Aristo paper—A gelatine citro-chloride paper introduced in Germany by Leisegang Now manufactured freely in this country Will keep from two to three months if kept in a dry place. Its surface is very fine, but care must be taken to avoid touching the sensitized surface as much as possible. Placed in the printing frame as ordinary albumen paper; the printing is only carried to the depth required when finished. The print will be of a purple tone generally, but the dark parts become a slightly bronzed color. It is claimed that it prints three times quicker than albumen paper. The prints are to be placed face downward in washing, and are given five or six baths, or until there is no milkiness remaining in the bath. As there is a much larger amount of silver in this paper than in the albumen, it is well to save the baths and precipitate the silver by common salt. Twenty-three grains of chloride of silver have been recovered from the baths of a 19x23 sheet. A reliable toning bath for this paper is compounded as follows:

A.	Water	3 oz.
	Chloride of gold	2 gr.
B.	Water	3 oz.
	Sulphocyanide ammonia	40 gr.
	Hyposulphite of soda	1 gr.
	Carbonate of soda	3 gr.

Mixed together by pouring part of A into an equal part of B, in no case the reverse

Fixing bath:

Hypo	10 oz.
Water	100 oz.

Seven to ten minutes are generally sufficient to fix this paper.

ART IN PHOTOGRAPHY—Art has been called the head and hand work, and a creation deserves the name of art according to the quantity and quality of this expended on it. Mere reproduction is not art. In pure landscape, when modification is limited, the photographer shows it in him when he chooses one standpoint for his camera in preference to another. Possibly at no period of modern history has art derived so much assistance from science as at the present time it has done by the agency of photography, and art is beginning to realize the capability of the chemically-produced record of the visible to be moulded to her wants and wishes. But we must remember that photography may be reduced to a just understanding of a few simple formulas, and demands that its principle shall be justly understood, and by constant study always kept in mind. It is so easy to produce a photographic record of what may be interesting, but which at the same time does not constitute a picture, that it is to be feared that many do not recognize the difference between the application or non-application of the rules of art to pictorial representation. The greater the attention to and study of the rules of art, the higher will be the standard taken by photography. The study of Burnett's "Essays on Art" is recommended.

ARTISTIC PHOTOGRAPHY—In landscape photography strive for perfection. To do so read books on composition, light and shade. Study good pictures, and try to apply to them the rules you have learned Go to nature and do the same, and having done this, you will be astonished to find how your artistic intelligence has grown, and how much better your work is as regards the proper selection and treatment of the subject. The first thing to be done is to choose the subject, and here the importance of the thought and time spent on the choice comes in. The art knowledge acquired by study will tell you a good subject when you see it. Assisted by a view meter, you can see at once whether it would be better taken as an upright or long picture. Strive after good composition and effect. Properly dispose of the principal lines and masses. Prominent upright lines in or too near the middle are apt to cut the picture in half, giving two subjects instead of one. Prevent, if possible, any important sloping line running out of the picture. Have but one point of interest, and that not exactly in the middle or quite at the sides of the picture.

Light and Shade.—Light gives an exhibition of form ; with it the object is full of details, while shade, by its obscuration, prevents their full development. Broad masses of light and shade present the best subjects. Therefore, the broader and simpler, the better.

Breadth is essential to good effect, and many photographers fail simply for the want of breadth. Avoid having an equal amount of light and shade. If possible obtain a large surface of light and next to this a large surface of shade, which in turn should be shown up by a deeper tone still. In the broad mass of light which is usually represented by the sky there should be a leading mass of light, high light, and in the same way there should be a leading mass of dark in broad mass of dark, deep black. A system of gradation here comes in ; high light must not be a spot, neither must the deep dark. Light must be added to light, and dark to dark in the case of deep dark. The half tint should occupy a large proportion of the subject, for it gives due importance to the extremes of light and shade. To produce harmony some of the dark must be carried into the light, and the light into the dark. The opposing parts of the picture are united, in other words, balance of effect. Concentration consists in the subduing of those parts which detract from the importance of the whole. It causes the eye to travel into the picture, or brings to a focus that portion which is the most important, in fact emphasizes the point of interest, prevents scattered interests, and conduces to simplicity of treatment.

ARTIFICIAL LIGHT—The usual lights used to produce negative transparencies, enlargements and prints, other than the sun, are the electric, gas, lime light, magnesium in powder or ribbon, compound flash powders, and kerosene oil.

Electric Light—Has been used more or less, especially by the professionals, for nearly thirty years. Ost, of Vienna, used it first in 1864. To obtain sufficient power to be of any service, up to a short time, dynamos which had to be driven by steam or gas engine were required, and the cost of which necessarily deterred many professional and amateur workers from using it. But the rapid growth of this element for lighting in various cities and towns has in a great measure put it into the hands of the many. Large electric lights are placed in the focus of parabolic reflectors, and shaded by opal, ground glass or linen, to diffuse the light. As a rule, the lights should consist of two, one somewhat smaller than the other, both about 45° above the sitter. The larger on one side and the smaller on the other side and somewhat farther off. Screens of various thicknesses to light up the shadow side and prevent too great contrasts are needful. For the dark room this light, from its steadiness and uniformity, is all that is to be desired.

Gas can be used for portraiture provided one has a sufficient number of burners. A somewhat similar arrangement as described above will be necessary. For contact printing it is frequently used, especially by the amateur, in the preparation of transparencies, lantern slides, and prints on various papers. The time of exposure, using an Argand burner, is very readily acquired.

Lime Light—Made by burning lime placed in the focus of a parabolic reflector in a lighted jet of oxygen and hydrogen or coal gas. This light is very intense, and in the production of negatives, etc., just about double the exposure of daylight is required.

Magnesium—As a substitute for daylight has been in use for some years, first as a wire or ribbon, and machines more or less elaborate were made to burn it automatically. By it the interior of the great pyramid was successfully photographed by Dr. E. L. Nilson, and others have used it to photograph the interiors of caves and mines. Dr. H. G. Piffard, of New York City, was the first to use the powder successfully in this country. He combined it either with guncotton or gunpowder, and fired it by a fulminating cap. Such is the intense light given by a few grains of magnesium powder thrown into a gas or spirit flame that very satisfactory portraiture and interior work can be done with an ordinary lens. In portraiture it is necessary to have sundry lights, either gas or oil, burning at the time the exposure is made, thus producing more softness to the picture and a more natural appearance to the eye. Without these there is always a stare or complete closure of the eye. The bottoms of oil wells after an explosion of dynamite have lately been successfully photographed by the aid of this powder.

The Flash Powders—Or compounds designed to give the magnesium a greater amount of oxygen, have been very numerous. But as a rule they are more or less dangerous and unsafe to handle from their very ingredients, and serious accidents accompanied with loss of life have recently occurred. To say the least, it is prudent not to employ them, and especially so as all the effects wanted can be obtained from the magnesium alone.

Lamp or Oil Light—The more lamps and the more powerful used, together with rapid plates, is a *sine qua non* for portraiture, if it is desirable, but the length of exposure is frequently increased as much as five times. Therefore this branch of the art and science is not often indulged in with lamps. For contact printing either on glass or paper a large kerosene burner will give admirable results.

ARTOTYPE—A mechanical print process. Consists of first coating a cleaned plate with bichromatized albumen, drying, and then giving it a coat of a solution of gelatine and bichromate of ammonium, drying, and giving it an additional coat of a solution of gelatine, fresh glue, and bichromate of ammonium, chrome alum, and bicarbonate of potash. For full particulars of process see "British Journal," 1888, page 356.

ASPHALTUM—Bitumen—Bitumen of India—Is a term which includes several substances occurring naturally in the earth. They are of a brownish-black color, with a peculiar bituminous smell, and occur chiefly in volcanic regions, such as the Dead Sea, Syria, the great pitch lake in the island of Trinidad, Cuba, Peru, etc. Chemically they are sulphureted hydrocarbons, and were probably formed by the action of heated sulphur upon petroleum or some similar body under ground. Composition: Carbon 80, hydrogen 10, sulphur 9, nitrogen and ash 1. The softer kinds are generally called bitumen, while the harder are known as asphaltum. Soluble partially in alcohol, ether, and benzole. Very soluble in chloroform, carbonbisulphide and turpentine. It is the foundation of most of the black varnishes. In photography it has a special interest, as it was upon a metal plate covered with a thin layer of asphaltum that Niepce, about the year 1827, perhaps a little earlier, obtained the first permanent photograph. It is affected by light with the result that it is rendered insoluble in its usual menstrua. It has for this reason long been employed in photography, in which its indifference to acids is also of much value. Niepce, in his photographic process called heliography, first employed asphaltum about 1824, since which time numerous processes have been invented. Beautiful etchings can be produced upon steel plates coated with asphaltum dissolved in oil of lavender or lemon, exposed, and then etched in the iodine water.

ASTIGMATISM - A very common defect of vision in the human eye. The rays of light are not brought to one focus, but converge at different distances, so as to form two linear images at right angles to each other. In lenses the defect is due in some measure to their spherical form, in which the horizontal and vertical lines near the margins of the lens cannot be accurately focused at the same time. That universal doctor in optics, the diaphragm, reduces this defect almost to the minimum.

ATOM—An ultimate or undivisible particle of an elementary body, having a constant weight peculiar to itself.

ATOMIC WEIGHT—Is the number expressing the proportion by weight in which the elements combine, one of these elements, either hydrogen or oxygen, being assumed as the unit for comparison with the others. Oxygen and hydrogen combine to form water in the rates of 1 of hydrogen to 8 of oxygen, and 1 and 8 are therefore the atomic or combining weights of hydrogen and oxygen. Also called combining equivalents.

Atmosphere, The—Is one of the prime factors in enabling us to judge of distance either in a natural scene or its pictoral representation. Were it not for this, a succession of mountains, one behind the other, would be merged into each other, producing an unbroken mass Atmosphere as applied to art is visible vapor, and is that which imparts a distant effect to objects in proportion to the depth of it that intervenes between such objects and the observer. Absolute clearness of the air is frequently fatal toward securing the best effect of a certain scene, especially in photography.

Atmosphere, Artificial—In photography such an effect is capable of being obtained by means of a careful and occasionally laborious process of applying colored washes over the negative, so as to make certain portions retire, the opacity of the washes being increased or decreased to enable the desired effect to be secured. But there are many cases in which this is altogether impossible. But the amateur may call into service an ephemeral background at will, a misty-looking background produced by smoke: let him burn some partially wetted straw, and find that this device will give him all he wants.

Astronomical Photography—An eminent astronomer lately said photography is about to revolutionize astronomy, and the signs of the times clearly demonstrate that the revolution has already begun. In March, 1840, Dr. Draper, of New York, announced to the New York Lyceum of Natural History that he had succeeded in getting a representation of the moon's surface by the daguerreotype. Daguerre, at Arago's request, had attempted it the year previous, but had failed. The time occupied by Draper was twenty minutes, and the size of the figure about one inch in diameter. Whipple and George P. Bond, of Harvard College, exhibited some much better daguerreotypes at the great exhibition of 1851, and called forth from the jurors the following: "This is, perhaps, one of the most satisfactory attempts that has yet been made to realize by a photographic process the telescopic appearance of a heavenly body, and must be regarded as indicating the commencement of a new era in astronomical representation." The introduction of the collodion process by Scott Archer, in 1851, gave a very decided impulse to celestial photography, and many beautiful and exquisite photographs of the moon's surface were made by Dr. Draper and Lewis M. Rutherfurd, about 1868. Dr. Maddox, in 1871, proposed gelatine instead of collodion as the body to receive and hold the sensi-

(To be Continued.)

ENGLISH NOTES.

BY THOMAS BOLAS.

A Demonstration of the Primuline Printing Process.—This method, though specially interesting from a scientific point of view, is not in any sense likely to step in as an every day process in the photographic work-room, as it gives a positive from a positive, and moreover the tints obtained are not such as are ordinarily desired for pictorial effect. Still it may, and perhaps will, be extensively used in reproducing engineer's tracings. The process is one which is rather difficult to carry out on paper, but easy on textile fabrics, such as cotton or linen, a point which will give it especial advantage for reproducing working drawings of details—drawings which soon become dirty, and consequently useless, unless they can be washed. The primuline process is, however, subject to a patent, and this may perhaps be the determining circumstance which may occasion the preference of other available methods.

A new yellow dye of the "aniline class," but which is really an amido derivative of the next homologue above aniline, *i.e.*, toluidine, is now in the market under the name of primuline, and cotton or linen cloth is very readily stained by immersion for a few minutes in a hot aqueous solution of primuline. The yellow cloth being now immersed in a solution of nitrous acid (or sodium nitrate acidified with acetic acid) becomes reddish from the formation of a diazo-derivative corresponding to primuline. The cloth, being exposed under a tracing or other positive transparency, the reddish compound is bleached where the light acts. At this stage the image is of course unfixed, but certain phenol derivatives not only tone and intensify it, but also give it permanency against further exposure to light. When demonstrating the process at a recent meeting of the Photographic Society of Great Britain, Mr. Green immersed samples of exposed cloth in the following developers, the tone of the image being in each case as stated below:

Beta-Naphthol in solution made alkaline with caustic soda.	Red.	Alpha-Naphthalamine hydrochlorate.	Purple.
Resorcin in alkaline solution.	Orange.	Alpha-Naphthol sulphonate of sodium.	Crimson.

The results are fast enough to withstand boiling with soap and water, and Mr. John Spiller stated at the above mentioned meeting that he had observed no fading when the prints were exposed for a few hours to sunlight. The inventors of the method (Messrs. Green, Cross & Bevan) are putting the process on the market under the name "diazotype."

Reversal of the Gelatino-Bromide Image.—A satisfactory reversal method requiring no longer exposure than is needed for producing a negative has long been wanted, and Colonel Waterhouse seems to have obtained a key to it by adding various sulphur derivatives of urea (carbomide) to the eikonogen developer; indeed some of the derivatives—notably allyl-thio-urea and phenyl-thio-urea—cause reversal when other developers than eikonogen are used. Urea itself has no similar action. For actual work the eikonogen developer is mixed with one-fourth to one-fifth of its bulk of a saturated solution of the phenyl-thio-urea in water; but even this saturated solution is extremely weak, owing to the considerable insolubility of the compound in cold water. When line subjects are to be photographed for photo-mechanical processes it becomes desirable to give the plates short treatment with an oxidizing bath before commencing the development, either a nitric acid bath containing five per cent. of the acid may be employed, or a bichromate of potash bath containing three or four per cent., and in either case the plate must be well rinsed before development.

The Exhibition Soirée of the Photographic Society.—This event of the year took place last month, and as usual was a meeting ground for the many prominent workers in photography who ordinarily only see each other on this annual occasion. Those responsible for the organizing of the exhibition soirée usually make great efforts to secure the presence of titled or "distinguished" persons, *i.e.*, distinguished in the sense of not having done anything very clever or remarkable; but in this instance there was intense joy in the hall because the presence of the Lord Mayor of London had been secured. The Lord Mayor is a sort of head beadle of the city of London, who is elected annually from among the successful business men, and who, after figuring in a monstrous puppet-show which makes London impassable on the ninth of November, gives dinners and receptions in a raiment which, for crude and barbarous adornment, surpasses the wildest dreams of a negro chief in his own native Africa. The *British Journal* gravely records that he "carefully examined the pictorial works." Really the most notable circumstance at the soirée was not the presence of the Lord Mayor, but the evident extent to which the movement led by Dr. Emerson has made inroads on the conventions of taste; while the extent to which platinum printing has replaced silver printing is also very remarkable. The Photographic Society of Great Britain has taken a floor in the neighborhood of the British Museum for the use of its members, and the accommodation is to include two dark-rooms.

Commercial Sulphites.—The difficulty of obtaining sulphites in a pure condition is a considerable source of trouble to those using these salts in the developer, and has done much to counteract the advantages of such developers. The normal sulphite of sodium is the most constant commercial salt, and when purchased, in large,well-defined crystals, and made up in well closed pound bottles, it is obtained at its best, although even then it frequently contains free carbonate of soda, and five or six per cent. of the inactive sulphate instead of sulphite. The ordinary acid sulphite of soda (sodium hydrogen sulphite) is most subject to uncertainty, not only on account of carelessness in its manufacture, but also through change resulting from exposure to the air. Professor C. H. Bothamley having found that the commercial samples of this salt occasionally contain only a trifle over one-eighth of the proper proportion of the active constituent sulphurous anhydride, and it may safely be estimated that the proportion seldom exceeds two-thirds of what it should be. The anhydro-sulphites (also called metabisulphites), whether of potassium or sodium, are much more reliable, and those commercial samples sold in large and well-defined crystals should be selected, and it is more desirable that the salt should be put up in small bottles by the manufacturers than weighed from a stock bottle by the retailer. Not only are the samples which crystallize in large crystals for the most part purer at the first, but as Professor Bothamley points out, less surface is exposed to the air for a given weight of salt, so the rapidity with which deterioration takes place is proportionately less.

Unequal Stretching of Paper.—Most of the papers used for photographic purposes, and indeed all the ordinary sorts used for albumenizing, are machine made, and not only expand unequally when damped, but are unequal in strength in the two directions, owing to the fibres arranging themselves longitudinally during the process of making, and a portrait on such a paper is always somewhat distorted, the face being made broader or longer according to the way the paper is cut from the roll; the expansion being greatest across the band of paper. The maximum distortion is obtained when damp prints are mounted on stiff boards, and when a slight mechanical strain put on the paper during mounting facilitates and accentuates the tendency of the paper to stretch across the band. The *British Journal* points out that in such a case a two-foot strip cut across the band will often stretch nearly two inches under these circumstances, while similar strips cut in the direction of the length of the band will only stretch half an inch. Under these circumstances it becomes desirable to use hand-made paper for portraiture where anything like truth of expression is desired, as a very much less proportion of distortion will considerably alter the expression of a portrait. The difficulty is increased by the fact that many machine-made papers are now sold with fictitious rough edges as "hand-made," but the expansion test is an easy one to apply. Some of the Dutch hand-made papers of Van Gelder give excellent results, whether simply salted and sensitized, or whether albumenized; and the same papers may be coated with a gelatine emulsion. The same fibre seems to be used in the whole of the Van Gelder series of hand-made papers, but they are made up of various degrees of smoothness and thickness.

Fitting a Small Lens into a Large Flange.—Circumstances often arise which necessitate the temporary fitting of a lens to a camera, when no proper adjusting flange is at hand, and as a quick means of doing this—whether at home or on tour—the editor of *Photography* mentions the following: "A few days since, having to test a lens which was smaller than our flange, we hit upon the expedient of wrapping the body of the lens round tightly with thick loose twine, and then screwing the flange on to the thick end of twine—a method which answered our purpose fully." This course generally necessitates putting the lens in the flange from the inside of the camera, as the screwed part is usually not long enough to take the required amount of string. Instead of string I have used black tape for the purpose of bringing up the lens mount to the diameter of the flange, and it not only forms a safer excluder of light, but can be so wrapped as to form a cone, one end of which will just enter the flange, and the arrangement can be screwed up till it is almost as firm as the ordinary optician's mount. Black tape-like string can be had at almost any village shop. In the absence of tape, strips of any kind of black cloth may be used.

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Orthochromatic Photography.

BY G. CRAMER.

[Read before the Photographers' Convention at Washington, August, 1890.]

As long as photography has been in existence, it has been the desideratum to produce photographs in natural colors, but while this problem is at present still far from being solved, one great improvement has been accomplished as the result of many scientific researches, that is to produce photographs of colored objects in the correct graduations of shade or what is termed " orthochromatic."

It is a well-known fact that formerly this would not be done and that in ordinary photographs of colored objects the violet and blue is reproduced too light, while green, yellow, and red appears too dark. For this reason it is noticed in landscape photography that much detail is lost in the foliage, that the blue sky appears as light as the white clouds and renders the latter invisible; in portrait photography the auburn or red hair comes much too dark, also the freckles much too prominent, and blue eyes, blue or pink dresses, etc., entirely too light. In the reproduction of colored paintings this defect is most objectionable, as the lights are often yellow in the original, and appear darker in the photograph than the half shadows which are painted in bluish tints.

The cause of these shortcomings of photography has been carefully studied and it was found that only such rays of light affect the photographic plate, which are absorbed by the salts of silver employed in the preparation of the sensitive collodion or emulsion. The bromide and iodide of silver absorb mostly the violet and blue and little of the yellow, orange, and red rays when exposed to the spectrum.

Professor H. W. Vogel observed by his spectral analytical experiments that photographic plats can be made equally sensitive to all colors, by adding certain dyes which enter into combination with silver and absorb those colors of the spectrum which are not absorbed by the bromide of silver, and his first experiments in this direction date back to the year 1873, when he succeeded in photographing a piece of yellow tissue, decorated with a piece of blue ribbon, with coralline stained bromide of silver collodion plate. A yellow screen was interposed between the object and the lens. The dyes most employed were cyanin, fuchsine, naphthaline red, aldehyde green, and methyl violet.

In 1874 Becquerel introduced chlorophyl and Captain Waterhouse the eosine or fluorescein. In 1879 Ives, of Philadelphia, published his chlorophyl process. Other eminent experimentalists, such as Schumann, Becquerel, Waterhouse, Abney, Attout, Clayton, Carey Lea, Dr. Eder, Swlik, Mallmann, and others added their share to the perfection of the orthochromatic process, and many dyes, mostly of the aniline group have been employed to obtain the desired result, principally eosine in its form as Tetrabromfluorescein and Tetra, jodfluorescein, erythrosin, chinolin red and chinolin blue or cyanin.

The commercial dry plates can be rendered orthochromatic by bathing them in a solution of these sensitizers, but plates so prepared do not keep very long. It is better to introduce the dyes into the emulsion or collodion before coating the plates to secure better keeping qualities.

One of the drawbacks in working the orthochromatic plates is the necessity of using a yellow screen through which the light has to pass in order to subdue the violet and blue colors. Either a yellow colored glass or a yellow pellicle made of colored collodion or gelatine is inserted in the place which the diaphragm occupies between the front and rear lens, the darker shade of the yellow screen giving the stronger orthochromatic effect, but also lengthening the required time of exposure considerably. The colored screen must be very perfect, of even structure and color, and as the focus of the lens is changed by the interposition of a yellow screen, the focusing must be done with the screen inserted, which, owing to the feeble light admitted through it, is rather difficult.

The idea that the yellow screen alone will give the orthochromatic effect, even if any ordinary dry plate is used, is erroneous, as the bromide and iodide of silver are but little sensitive to the yellow and red light and the effect of the blue will always be predominant in photographs produced with ordinary plates.

It is now the aim of experimentalists to prepare orthochromatic plates in which the sensitiveness to the violet and blue rays are reduced to a minimum and the sensitiveness to the green, yellow, orange, and red increased to the highest degree, so that the use of yellow screens is rendered unnecessary, and I for myself can report progress in my experiments in this direction, so that I hope soon to be able to place on the market an orthochromatic plate of good sensitiveness which can be worked without a yellow screen.

SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

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Photographic Society of Philadelphia.—The regular monthly meeting was held Wednesday evening, October 1st. The most important business transacted was the vote against continuing the present arrangement with the Boston and New York clubs for a joint exhibition. It is proposed, however, that an exhibition shall be held annually in rotation in each of the three cities, the local society assuming all the responsibility of such exhibition. After the reports of various committees had been read, Mr. John Carbut gave a brief account of his trip to Europe. The matter of uniting with the Syracuse Club in holding a convention of amateurs was referred to a special committee with full powers to act in the matter.

The Society of Amateur Photographers of New York, 113 West Thirty-Eighth Street.—October 3d a very enjoyable exhibition of lantern slides was given, comprising mostly the work of the Philadelphia and Baltimore societies. In the Philadelphia collection were views on Lake George, in West Virginia and California. Also excellent landscapes by Mr. Robert S. Redfield, called "See-Saw," "The Last Load," "Off for the Fields" (an instantaneous study of cows), "Reaping," "An August Afternoon in Berkshire," and a study, entitled "Patience," showing a man fishing. Mr. Redfield's slides were very crisp and clear, and were among the best of the series. The evolution of a night-blooming cereous by flash-light as shown in a series of slides by Mr. Wm. H. Rau, was very interesting. Other views were of the Florida hotels and gardens. "Darby Creek," by Mr. Edmund Stirling, views in Boston and on the Wissahickon. "Coming up the Delaware," a ship under full sail, by Mr. Robinson, was a fine picture. "Our Dollies," by Mr. H. Parker Rolf, was a good figure study. Mr. Geo. W. Ennis' pictures of the Johnstown disaster were very interesting. "The Banjoist," by Mr. George B. Wood, was an amusing study.

The Baltimore set contained seven or eight beautiful slides of Norway scenery, by Professor A. H. Rowland, views of the Natural Bridge in Virginia, views in Florida, the Catskills, Niagara, Virginia, Gwynns Falls near Baltimore, and on the Antietam. There was also a slide of a century plant about to bloom, a sled ride, showing a peculiar shadow effect on snow, and a moonlight effect, showing a team or sled going up a hill. It was quite a remarkable picture. An historical slide was of a "Revolutionary Prison in Connecticut," by a Miss Robbins. A few slides, made by members of the New York Society, followed, including views by Mr. Post, Mr. Roumage, Mr. Warren, Mr. Vilmar, Mr. Wundram, and three slides, representing the poem of Enoch Arden, by Miss Catherine Weed Barnes, all of which were very much liked.

October 14th, on Tuesday evening, occurred the regular monthly meeting of the Society. President James H. Stebbins, Jr., being absent on a trip to Switzerland for his health, and Vice-President A. L. Simpson being absent, as well as Secretary Thos. J. Burton, Mr. Robert A. B. Dayton acted as chairman, and Mr. F. C. Beach, the Corresponding Secretary, as secretary of the meeting. There was not a very large attendance, but the things brought out were interesting.

The chairman called on Mr. T. C. Roche to illustrate the Carbon Process. He read a statement (see page 428). The process of carbon printing was successfully demonstrated. A glass plate is coated with collodion, on which is squeegeed the paper supporting the printed carbon tissue, the tissue side being in contact with the collodion. Then the whole is immersed in water at 120 degrees Fahrenheit, which dissolves the gelatine unacted upon by the light, and allows the paper support to be removed.

To develop the picture it is only necessary to dissolve out the unacted-upon gelatine adhering to the glass by dashing hot water on it. Different colored pictures may be made by using carbon tissue of different colors. Mr. Roche stated that each negative had to be judged as to density and clearness before printing in the printing frame, the time being calculated by the time it took to turn a piece of silver paper black under a graded scale. One could not see the image on the carbon tissue as in silver printing. The prepared tissue is sensitized by floating on a bath of bichromate of potash. The advantage of the process is that the pictures are absolutely permanent. Beautiful window transparencies were brought to view.

An interesting discussion on the eikonogen developer brought out the fact, as stated by Dr. A. H. Elliott, that the dark-green solution of eikonogen and sulphite of soda could be clarified by precipitating the eikonogen down with hydrochloric acid in the form of a whitish flocculent powder, decanting off the solution, and re-dissolving the powder in a solution of sulphite of soda and water, the proportion of sulphite being two ounces to every single ounce of the eikonogen powder.

He thought the cause of the turning of clear crystals from yellow or white to dark green and black was due to carelessness in the manufacture. He thought that originally, after the crystals were formed, they were not thoroughly washed. All authorities concurred in the opinion that there was no special diminishing of the developing power by the change from a clear solution to dark green. The clear solution was apparently more clean and desirable to work with.

Mr. F. C. Beach showed a new shutter, called the "Crown," invented by Mr. Robert E. M. Bain, formerly President of the St. Louis Camera Club, which was based on the principle of two crescent-shaped leaves of steel passing by each other rapidly, propelled by a strong or light spring as desired. By simple, yet unique, devices, one piston pneumatic pump set off the instantaneous movement, and another was arranged for time, while a third device held the shutter open indefinitely for focusing. It was located between the lenses, and resembled, in general appearance, the Prosch shutter. The shutter had the merit of working very rapidly.

Mr. Turner, of the Gundlach Optical Co., of Rochester, N. Y., exhibited a very neat and compact shutter, working between the lenses. Two miniature leaves of crescent shape are propelled by a light coiled spring held on top of the lens tube. Means are provided for holding the shutter open for focusing, also for a time movement and for adjusting the rapidity of the shutter. He stated that they only fitted shutters to their own lens tubes. It appeared to be simple and effective.

Two novel hand cameras were shown. One by Mr. A. G. Tisdel was concealed in an ordinary hand bag, the lens being under the flap. The operator faced his object at right-angles, and, looking down upon the finder, pressed the trigger. It had the advantage of not pointing the camera directly at the object, which never attracted any attention. Mr. A. D. Fisk also showed a magazine camera, holding thirty-six 3¼ x 4¼ plates. By moving one lever on the side, a plate is exposed and automatically transferred from one compartment to another. The leather carrying strap conceals the opening of the lens and finder, and is quickly slipped up when an exposure is about to be made.

The Secretary read the following resolution in regard to joint exhibitions which has been adopted by the three associations:

Resolved, That the agreement heretofore existing between the Society of Amateur Photographers of New York, the Boston Camera Club, and the Photographic Society of Philadelphia, to hold annual joint exhibitions of photographs, be hereby cancelled, and in place thereof it is agreed that each organization will hold a public exhibition of photographs, open to all photographers of the world, every third year.

These exhibitions are to be held annually in rotation in each of the three cities as before, but each exhibition is to be under the entire control and management of the society holding the same, and under such rules as it may adopt.

Each society further agrees that it will not hold any public and open competition exhibition except in its regular turn as above, without the consent of the other two societies.

Neither organization assumes any responsibility in regard to any exhibition except its own.

On Friday evening, October 25th, "A Trip to the White Mountains," by the members of the Boston Camera Club, was the subject of an entertaining exhibition of lantern slides. Many of the views were made by Mr. William Garrison Reed, Mr. Briggs, Mr. Dessault, and Mr. Latimer, and a majority were produced by the wet plate process. The slides were very clear and uniform. The pictures were graphically described in a written lecture on the subject furnished by the club and read by Dr. E. C. Bolles. The views were very beautiful, and the slides, being made mostly on wet plates, were uniform in quality.

The approach to the mountains, the noted Glen House, and the grand view from its piazza, were shown. Others were views in Dixville Notch, and surrounding country, Crawford's Notch, the Saco Valley and distant mountains, Conway, N. H., with Mount Liberty in the distance, the Old Man in the Mountain, the ascent of Mount Washington, view of distant hills and peaks from its summit, and the government signal station. There were some exquisite snow views taken by a member of the club, nicknamed "The Camera Club Snow Fiend." A picture of the "Instigator," so called because he inspired the idea of amateur photographic associations getting up illustrated lectures of special subjects, represented Mr. William Garrison Reed comfortably seated in the woods at the base of a tree. "Old Jack," a noted character in the White Mountains, who will, for a consideration, swallow a live frog, was also depicted. The lecture, altogether, gives a very fair idea of the country it is designed to illustrate, and is worthy of imitation by other societies. It will next be shown in Brooklyn by the Brooklyn Academy of Photography.

The National Association of Amateur Photographers.—The Syracuse Camera Club has met with such success in its efforts to found a National Association, that the preliminary meeting for organization is called for December 4th. The following circular from the Club gives fuller particulars:

The Syracuse Camera Club, by resolution dated August 8, 1890, authorized the issue of a brief address to the amateur photographic societies and clubs of America, calling their attention to the desirability of a national organization of those interested in photography, either practically or in its purely scientific relations. No further reference was made to the special objects of such a National Association, but the circular was thrown out as a germ thought around which might crystallize the suggestions, objections, or assents of the organizations to which it was addressed. A large number of clubs and societies have responded favorably to this address.

The Syracuse Camera Club authorizes the publication of the following:

"It may be well in this call for a meeting to effect the preliminary organization which this numerous favorable response authorizes, to herein enumerate some of the purposes that fall naturally within the scope of such a convention suggested in the many answers to the circular.

First. The stimulous to study, invention, theoretical and technical knowledge that results from personal touch with those devoted to the many-sided science called Photography, and to dignify a beautiful art that is in danger of being belittled by its aimless practice.

Second. That those objects are best served by an annual conference preserving its organization from year to year, and governed by a council or executive board, and its officers elected annually, or otherwise, as may be determined at the preliminary meeting.

Third. In connection therewith, annual exhibitions of photographs, photographic appliances, and apparatus, and thus secure excellence of work and inventive activity.

Fourth. To promote the application of photography to the sciences, arts, and professions, among which we may mention Astronomy, Mineralogy, Geology, Botany, Biology, Medicine, Pathology, Microscopy, Surveying and Mechanical Engineering, Geographical and Historical Photography, Medico-Legal Photography, Submarine and Spectroscopic Photography.

Fifth. To preserve the scientific papers and inventions presented at the meetings in an annual volume of transactions, and thereby encourage men to prepare papers upon chemical, optical, and other collateral sciences embraced in the field of photography.

Sixth. To secure arrangements with foreign custom houses, through the general government, for the safe transmission of undeveloped plates and apparatus belonging to members of the national organization, and to arrange with national, state, and local authorities the privilege to photograph in public parks, buildings, and on public occasions, under the protection of his badge or membership card.

Seventh. To secure conveniently arranged dark-rooms in all the hotels throughout the country, and special rates for the members of the League, and the preservation of a photographic directory of each locality relating to the objects of historical and scenic interest, and the best time of day to photograph.

Eighth. To secure from the general government the free interchange of negatives and slides between the various club societies and members, represented in the National League or Conference, and foreign photographers, or societies.

This is only a partial enumeration of the important subjects that await the action of such an annual conference, and to establish which your co-operation is earnestly solicited. The Board of Directors of the Society of Amateur Photographers of New York, at a meeting held on the 23d of September, kindly granted the request of the Syracuse Camera Club for the use of the society rooms for a meeting of delegates to perfect the preliminary organization.

You are therefore invited to send one or more delegates from your organization to meet at the rooms of the society in New York City, No. 113 West Thirty-Eighth Street, on the fourth day of December, 1890, at 10.30 o'clock A.M. An answer as early as convenient is requested, together with the names of the members who may be delegated to attend."

(Signed) WALLACE DICKSON, *Secretary.*

Secretary's Address, Box 173, Syracuse, N. Y.

Springfield (Mass.) Camera Club.—The following list of officers was elected at the annual meeting, held October 16, 1890: John Leshure, President; W. M. Lester, Secretary; H. N. Bowman, Treasurer; C. C. Morgan, Librarian; C. A. Emery,—*Executive Committee.* John Leshure, Chairman; H. N. Bowman, R. W. Adams,—*Room Committee.* Committees were also appointed for a photographic exhibition to be held about December 1st, and for the lantern slide exhibitions of the New England Exchange.

Brooklyn Academy of Photography.—An interesting exhibition of lantern slides made by members was given at the Hoagland Laboratory on Thursday evening, October 23d, and was largely attended.

New York Camera Club.—Early in November quite a novel exhibition of illustrations by photo-mechanical processes is to be given, to be accompanied by a pamphlet describing each process. Several of the process publishers will send specimens of their latest work.

The Chicago Lantern-Slide Club.—The report of the secretary, Mr. W. A. Morse, on the work of the club is most encouraging. Many new members have been added and work on the interchange set of slides is progressing most satisfactorily.

The American Lantern-Slide Interchange.—A majority of the executive committee met in New York on the 18th of October, at which time Mr. George Bullock tendered his resignation as manager in consequence of the additional duties put upon him by the loss of his father. He is still one of the assistant managers and will act with the committee in the selection of slides for next year's interchange. He has worked faithfully in the interests of the Interchange, and has caused the standard of work to be high. Mr. F. C. Beach has been elected to succeed him and should be addressed at 361 Broadway, New York, by members of the Interchange, or by new clubs wishing to join. Two interesting sets of foreign slides have been secured, one being the prize slides of the English journal, *Photography*, and the other slides from the Vienna (Austria) Camera Club. Slides are expected also from a French society. All of the contributing American associations send in their slides to New York on November 15th. Between that time and December 1st the executive committee meets in New York, examines, approves, or rejects such club slides as are not up to the standard. Considerable work is involved in this undertaking, but it results in the sending out of pictures worth seeing and of the establishment of an uniformity and system which is very desirable.

The Boston Camera Club.—Interchange of Illustrated Subjects.—How well the work undertaken by the club in getting up illustrated lectures with text to accompany them is being appreciated is shown by the correspondence which here follows:

BOSTON, October 20, 1890.

To the Editor of the American Amateur Photographer:

Dear Sir,—The following letter, just received, shows that considerable interest is being taken in England in this interchange.

Respectfully,
WM. G. REED,
Manager of Interchange of Illustrated Subjects.

LIVERPOOL AMATEUR PHOTOGRAPHIC ASSOCIATION, 3 Lord Street,
11th October, 1890.

WM. GARRISON REED, ESQ., 25 Kilby Street, Boston:

Dear Sir,—I now beg to acknowledge receipt of your favor of 23d ultimo., contents of which I have carefully noted. I have also to acknowledge receipt of the new lecture, "A Ramble In and About Columbus," the revised lecture of the "White Mountain" set, and the new slide 62, which has replaced the old one. We are delighted with the compact way the new set ("Columbus") has been made up, and which has been universally admired by the members who have seen it. The very sincere thanks of our Association are tendered to your club for the handsome gift. I am very glad to inform you that the three sets will be in great demand this season. I caused to be circulated in all the photographic journals the enclosed letter,* which I have cut from one of them, and the response has been so great that I have so far received about fifty applications, fixed for the loan of them, and at our annual meeting, in November, an assistant secretary will have to be appointed by our society to look after the sets. The "White Mountain" set was exhibited in London for the first time, on the 26th ultimo. . . . The set was also exhibited on Thursday last before the Birkenhead Photographic Association, and the new lecture read for the first time. We held a meeting of the committee last evening of the "Illustrated Liverpool" return set, when considerable progress was reported. I read your letter to them, and you may rest assured that we will treat you in the same kindly spirit as regards type-setting, mounting, and packing, etc. I am afraid, however, we shall be unable to get the set completed by the end of the year, as we desire to make the set thoroughly complete and representative of the second city in the Empire, and several important buildings, etc., have yet to be photographed. I shall be very pleased to hand you next year a list of the societies who have used the sets, and I may mention that I particularly request them, on receiving the sets, to mail you any press notices that appear in their local papers.

I am, dear sir,
Yours faithfully,
(Signed) E. M. TUNSTALL, *Hon. Sec'y.*

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* SIR,—It may be of interest to Honorable Secretaries of the photographic societies of the United Kingdom, who are making their arrangements for lantern exhibitions during the coming winter, to know that the Boston Camera Club (U. S. A.) are sending us another

lecture, entitled "In and About Columbus," to be here about the end of this month. This is a gift to the amateur photographic societies of England by the Columbus Camera Club, on the same general terms as "Illustrated Boston" and "The White Mountains of New Hampshire." There will then be three sets of lantern slides of about eighty each, with accompanying lecture neatly mounted in type, of American scenery, in free circulation in this country, and which can be loaned to any society on application to me.

E. M. TUNSTALL, *Honorable Secretary.*

Liverpool Amateur Photographic Society, September 20th.

BOOKS AND EXCHANGES.

LANTERN SLIDES BY PHOTOGRAPHIC METHODS. By Andrew Pringle. New York. The Scovill & Adams Co.

THE OPTICAL LANTERN. By Andrew Pringle. New York. The Scovill & Adams Co.

Mr. Pringle is well-known as a careful and painstaking writer on photographic subjects, and the two books now before us well sustain his reputation. In view of the increasing interest being taken in lantern matters, these books are timely. The former gives complete directions for making slides by several of the best methods. It is reliable and practical. The latter of Mr. Pringle's books discusses lanterns and accessories in a manner which bespeaks the expert. The aim of the book is to magnify the value of the lantern as an educational agent, and the directions for working the various types of lanterns are easily understood and very much to the point. We regret that in an American book of this kind no allusion should be made to the American type of lantern, which differs in some essential points from the English.

CAMERAS, LENSES, SHUTTERS, ETC.

PLATINUM TONING. By Lyonel Clark.

EXPERIMENTAL PHOTOGRAPHY. By C. J. Leaper, F.C.S.

ART PHOTOGRAPHY. By H. P. Robinson.

Messrs. E. & H. T. Anthony & Co. are introducing to American amateurs the valuable series of handbooks, reprinted for the most part from the *British Amateur Photographer*, and the four titles just given are the first fruits of the enterprise. Mr. Leaper's "Experimental Photography" is really an elementary guide to the art and a very good one. "Platinum Toning" contains a full description of Mr. Clark's method of toning silver prints with platinum, and will be welcomed by all lovers of mat-surface prints. Mr Robinson's "Art Photography" contains nothing that he has not already written in other books, but the matter is put in fresh form. A few illustrations are given to emphasize the more important principles enunciated, and Mr. Robinson's style makes the book pleasant reading.

"Cameras, Lenses, Shutters, etc.," is a collection of prize essays, by different authors, on the subjects indicated. Essays on development, exposure, and the sensitive medium are given in addition to those indicated by the title. The set is well worth reading and should have a large sale among younger amateurs, for whom the papers were originally written.

LANTERN SLIDE MAKING. By W. H. Burbank. Brunswick, Me. 50 cents.

In this book Mr. Burbank has aimed to select for description those methods of slide making which a long experience has shown to be the best for the amateur, and to give advice on such important matters as matting, coloring, etc. It covers rather more ground in the number of methods described than Mr. Pringle's book, mentioned above, and treats of some matters not discussed by Mr. Pringle. The two books, although dealing with the same subject, are really complimentary of each other.

THE DEVELOPMENT OF GELATINE DRY-PLATES. W. H. Burbank. Brunswick, Me.

After long delay, Mr. Burbank's long-promised book on development has made its appearance. It is an attempt on the part of a veteran amateur to exploit the difficult subject of development in a simple and practical manner, and, on the whole, the promise of the preface is well fulfilled. Some matters, which might well have been included, are omitted, but it is evidently impossible to include all the possible modifications of developers in a book of moderate size.

All the developers in common use are discussed and formulas for their use are given. The chemical reactions are indicated, and there are valuable chapters on general principles, the developing room, intensification, and reduction, etc. Younger amateurs will be greatly helped by the study of the book.

TRAITE PRATIQUE DE LA DETERMINATION DU TEMPS DE POSE. By Gabriel De Chapel D'Espinassoux. Paris, Gauthier-Villars et Fils, 1890.

The importance of a rightly estimated time of exposure and the difficulty attending its empirical calculation have induced many to seek for some mathematical means of appreciating the proper time. While many doubt the possibility of giving mathematical expression to a constantly varying factor, there can be no doubt that there is a scientific basis of exposure, and that the knowledge of the causes of its variation is of great value to the photographer. To impart this knowledge is the aim of the present treatise. Taking advantage of the labors of his predecessors in the same line, M. D'Espinassoux has given us a book which, at once theoretical and practical, forms an important contribution to the study of photography as a science. Even those who do not care to make use of the tables which are given to facilitate the computation of the time of exposure under varying conditions, will have their ideas on the subject greatly clarified by the study of the present book, that is, if they read French. We do not publish books of this kind in America.

We have received notice of a new book by P. H. Emerson, entitled "Wild Life on a Tidal Water," to be illustrated by thirty photo-etchings by Mr. Emerson. T. F. Goodall.

Catalogue on "The Cantilever Enlarging Apparatus," by William Hume, Edinburgh, Scotland, contains illustrations of a new and simple apparatus for enlarging on bromide paper, and a description of a special lantern for use in scientific lectures, with information about enlarging, developing, etc.

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THE DAGUERRE MEMORIAL.—We shall be pleased to receive subscriptions from amateurs for the memorial. Every one should take an interest in this memorial, as it is the only one erected to the honor of Daguerre in this country. The proprietors of the magazine have thought enough of the memorial to send a generous contribution, as the following letter shows:

$20.00 BUFFALO, N. Y. (246 Main Street), October 11, 1890.

E. B. Kiersted, Esq., Treasurer American Amateur Photographer, New York:

Dear Sir:—Please accept my thanks for your generous contribution to the memorial fund. Yours very truly, H. MCMICHAEL.

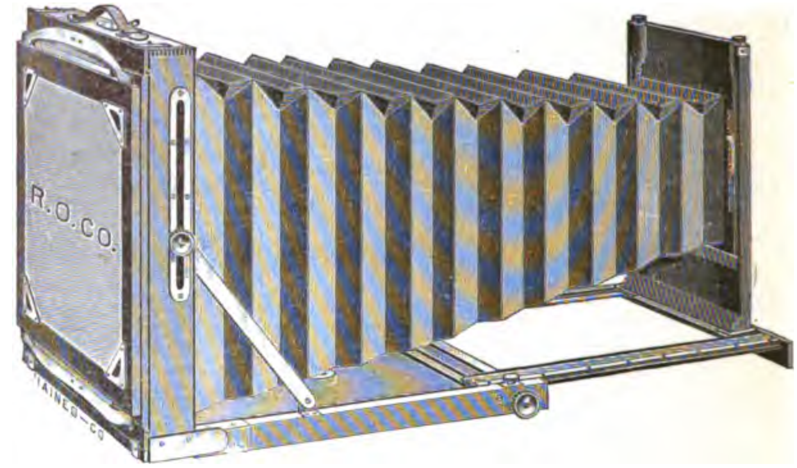
Subscriptions may be sent direct to us or to Mr. McMichael, chairman of the committee, at the above address.

AFRICAN PYTHON PHOTOGRAPHED WITH HAWKEYE CAMERA NEAR THE USERI RIVER.

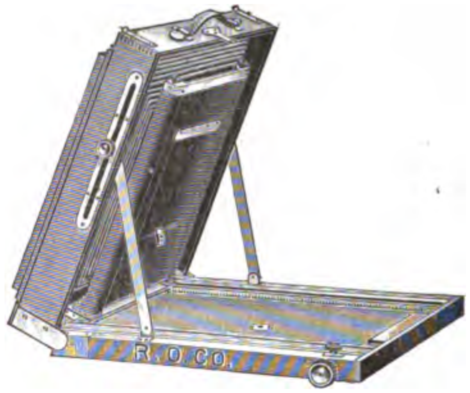
"CAUTIOUSLY parting the bushes with the muzzle of the gun, I beheld the reptile of the accompanying picture, his body coiled on the ground, and his head elevated about three feet. His tongue darted from his mouth viciously as I looked through the parting in the bush. Had I been prepared to convey him to the coast, I believe I should have been tempted to capture him alive. With a slip-noose at the end of a pole, I have no doubt that he could have been secured without much trouble. A load of partridge-shot in the head, a tremendous thrashing around in the bushes, and soon the delighted negroes were dragging the python into camp. Having photographed him with my ever-ready HAWKEYE Camera, I skinned him, and brought the trophy home to New York. He was an ordinary African python, fourteen feet long—a considerable come-down from Zaidi Nubi's tree."

Extract from "Africa as Seen by Thomas Stevens and the Hawkeye," in which Mr. Stevens describes, in the same happy and interesting vein which characterized his "Around the World on a Bicycle," the personnel and customs of an African expedition, a week's sport in the prolific game country adjoining the famous snow-capped mountain Kilimanjaro, with a valuable commentary on the latter, photographing a band of Masai warriors and other incidents of his trip. Fine engravings from negatives made in Interior Africa. Send 10c. in stamps for sample copy to THE BLAIR CAMERA COMPANY, Boston, Philadelphia, or Chicago.

The "Universal" Camera.



CAMERA FULLY EXTENDED.



PARTIALLY FOLDED. FOLDED.

The Universal Camera is a modified English Pattern and is the most compact camera in market, the 6½ x 8½ being but 2⅝ inches thick when folded and weighs but 5 pounds, and has a draw of 20 inches.

For further description and prices, send for Catalogue to

ROCHESTER OPTICAL CO.,

Or to any Dealer in Photo. Supplies. Rochester, N. Y.

MRS. JEANNETTE M. APPLETON.

IN THE LANE.

THE AME[illegible]

AMATEUR PHOTO[illegible]

A Monthly Re[illegible]

VOL. II. BRUNSWICK, M[illegible]

Our Illus[illegible]

[illegible] APPLETON'S "In the La[illegible] [illegible] affords a str[illegible] example [illegible] renders a simple subject. [illegible] [illegible]ling through a wood, and [illegible] [illegible] lady [illegible] wait the coming of [illegible] [illegible]asant meeting place. We [illegible] [illegible]ly in Mrs. Appleton's pict[illegible] [illegible] her presence adds g[illegible] [illegible] [illegible]ence which makes a pict[illegible] [illegible] [illegible] charming study.

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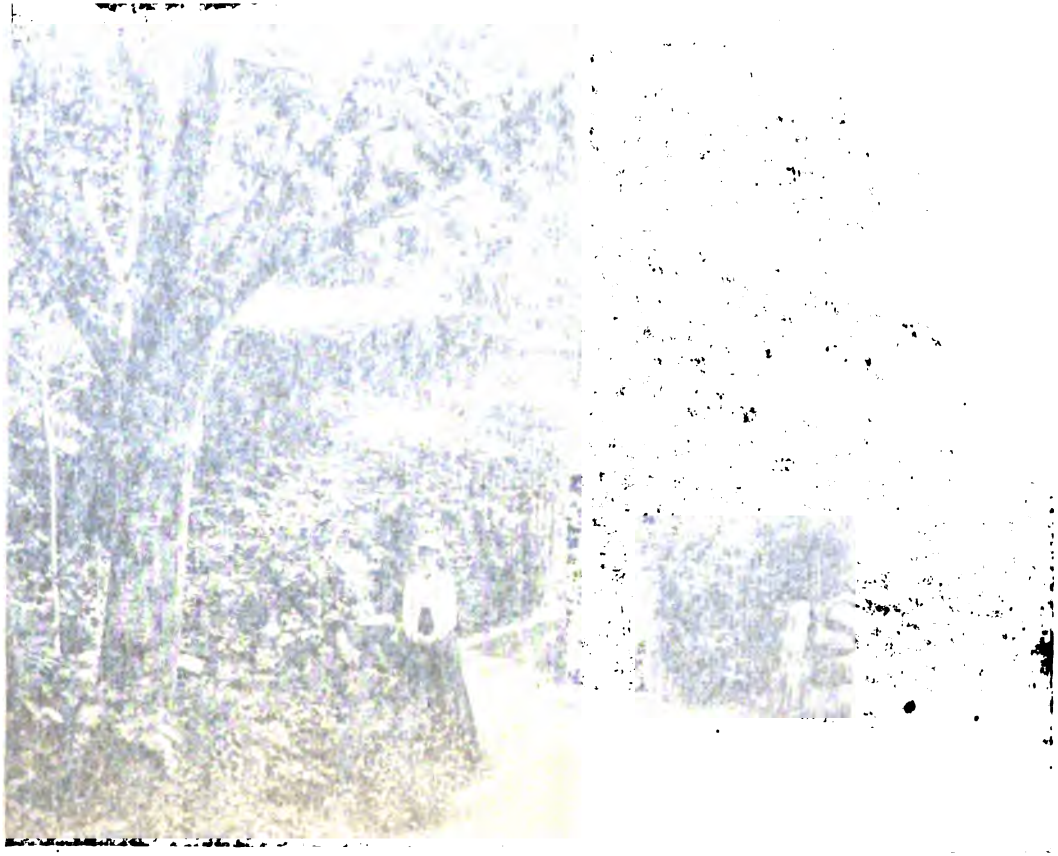
[illegible]itizing Paper at Home.

BY FRANK C. M[illegible]

[illegible] [illegible]oys a professional photographer to p[illegible] [illegible] good part of the enjoyment th[illegible] [illegible] A pi[illegible] [illegible]ted and finished by one's self f[illegible] [illegible] [illegible]e of satisfaction, especially if [illegible] [illegible] with the work of a profession[illegible] [illegible] [illegible]ss among the [illegible] who do finish their own [illegible] [illegible]hen it comes to preparing the paper for printing at [illegible] [illegible] dwindles down to a small percentage. Many use [illegible] [illegible] the majority of those who are noted for their [illegible] [illegible] [illegible]ir paper freshly sensitized from some photographer, [illegible] sensitize [illegible] [illegible] at home. There are [illegible] who would sensitize their own paper but [illegible] from doing so by the idea that it requires an elab[illegible], and [illegible] an expensive operation in the matter of a silver ba[illegible] one [illegible] in large quantities. But this idea is all wrong, and b[illegible]zing [illegible] a sheet of paper at a time, the amateur will find that he w[illegible] able



MRS JEANNETTE M APPLETON

IN THE LANE

THE AMERICAN

AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., DECEMBER, 1890. No. 12.

Our Illustration.

MRS. APPLETON'S "In the Lane," which forms our illustration this month affords a striking example of the charming way in which photography renders a simple subject. Nothing is more common than a roadway winding through a wood, and it is not unusual we believe for a charming young lady to await the coming of some favored guest from the city at such a pleasant meeting place. We are not authoritatively informed that the young lady in Mrs. Appleton's picture is keeping tryst, but she might well be, and her presence adds greatly to the scene by giving it that touch of human presence which makes a picture appeal to our finer sense. "In the Lane" is a charming study.

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Sensitizing Paper at Home.

BY FRANK C. MORTON.

THE amateur who employs a professional photographer to print and finish his pictures loses a good part of the enjoyment there is in the pastime. A picture printed and finished by one's self from a negative of one's own make is a source of satisfaction, especially if it is finished well enough to stand comparison with the work of a professional. There is a large class among the amateurs who do finish their own pictures, to be sure, but when it comes to preparing the paper for printing at home, then the number dwindles down to a small percentage. Many use ready sensitized paper, but the majority of those who are noted for their fine work either procure their paper freshly sensitized from some photographer, or sensitize it themselves at home. There are many who would sensitize their own paper but are deterred from doing so by the idea that it requires an elaborate outfit, and that it is an expensive operation in the matter of a silver bath, unless one does it in large quantities. But this idea is all wrong, and by sensitizing part of a sheet of paper at a time, the amateur will find that he will be able to supply himself with paper at a considerable saving in expense, and that he will not be obliged to bother to leave his orders ahead with the photographer, and run the risk of cloudy weather.

The outfit for sensitizing on a small scale consists of a glass or porcelain tray of a size large enough to float the largest piece of paper that will be required, a hydrometer, a small glass funnel, and some filter and blotting paper. If the largest size to be printed is a 5x8, the glass trays used by confectioners to display their goods in will make a good kind to use. One 6x9 will be large enough. In a four-ounce bottle put 200 grains of nitrate of silver, 120 grains nitrate of ammonia, and fill with water. Then add 8 or 10 drops of ammonia, and when all is dissolved the bath is ready. Put some filter paper into the glass funnel and filter the solution into the glass dish that comes with the hydrometer. Then test with the latter and make a note of the reading, so that the solution can be kept to the proper strength. See that the glass tray is perfectly clean and then turn the silver solution into it. The bottom of the dish should be covered at least one-fourth inch.

Previous to silvering, the albumen paper should be hung in a slightly damp place, say in a cellar, until it is quite limp. Unless this is done it will curl badly with small pieces. Cut the paper to the required size by laying it face down on a sheet of clean paper and marking on the back where the cuts are to be made. Before floating the first sheet, draw a strip of clean tissue paper across the bath to remove all dust and dirt. Now hold one of the sheets above the bath by opposite corners and lower gently on it. The paper may show a tendency to curl up, but it can be easily kept down with the fingers, or by breathing upon it until it becomes damp enough to lay flat. Then lift up a corner and examine for air bubbles and float about two minutes. This will be plenty long enough if the paper has been hung in a damp place.

In removing the sheet from the bath, draw it over the edge of the dish to remove the surplus liquid, and blot off the rest between sheets of clean blotting-paper. To dry it, take a clean box and pin the sheets inside as they come from the blotting-paper by pins in each corner. Don't draw it tight, or it will pull away from the pins in drying, but allow a little for shrinking. When the box is full, set away in the dark to dry, and when ready to print set a dish of ammonia in it and put the cover on for 15 or 20 minutes. When through with the bath, drain it back into the glass hydrometer dish and test to see how much it has been reduced. The difference between the reading now and before silvering commenced will be the number of grains of silver per ounce that must be added to bring it back to its original strength. Add the silver and turn back into the bottle. Don't add any nitrate of ammonia; only as the bath is used up, prepare fresh in the proportions first given and add to it. Of course any of the silver baths can be used, but this article is written to show how simple it is to silver small pieces. If glass or crockery ware is used the same dish can be used for silvering and toning, only it must be thoroughly washed after each operation.

One great objection to silvering at home will be urged by some, that it is messy work, and that silver stains are common on clothing and hands. The latter can be prevented by using the rubber finger-tips, or if a stain gets on the hands, it can be removed by cyanide of potassium. A person who can't keep the silver from his clothing should not undertake any of the processes of photography, as they all require care.

All who make pictures know the advantage of having fresh paper to work with, and I advise those who have not tried to prepare it themselves to try it, and I venture to say they will never be dependent on any one else for it again. The bath needs but little care, and if kept up in strength will keep clear for a long time and does not need sunning.

Notes on Plates, Etc.

BY JULIUS WILCOX.

SOME notes from my experience during the past season may be of interest; because, although an amateur of one season only, I have given the subject a degree of intelligent study and have attained results far beyond the majority of beginners.

The best plates I have handled are Allen & Rowell's "slow," sens 20. With five to eight seconds, well stopped down, for ordinary bright light outdoors, and two to three times that in woods and glens, they have invariably come out right. As an extreme case, I have one plate to which I gave fifty seconds' time, where I afterwards concluded a third or a quarter of that would have sufficed; the plate went into fresh and strong developer, yet, though it flashed out quickly and with dense high lights, I got a readily printable plate, perfect in contrast and details, without a trace of fog or "mussiness." These plates develop quickly and fix in the hypo with peculiar rapidity, invariably coming out clean and brilliant; other makers may have plates just as good, but that these are admirable I know, and I can heartily commend them. Their great value is their latitude in exposure. The hand camera invites the novice to go in for very quick plates and "snap shots"; then he goes into woody places, where the conditions of light are constantly varying, and if he uses his quick plates on cap exposures and misses his guess on the time, he spoils his work. On the other hand, these or equivalent plates require only to have time enough, and then, short of an extreme of over-exposure which I have not yet discovered, are lenient with errors and yield good results. Moreover, the quickest plates, besides being more readily fogged by light, are especially sensitive to impurity in chemicals and wrong proportions in developer; they are so "touchy" at all points of treatment that the chances of failure are at the maximum. For certain work, drop-shutter plates are indispensable; but my rule is to use them only when I cannot do otherwise, and I advise beginners to make the same rule.

Although none of my personal friends will touch them, I have found the Chautauqua plates very good. They are not quick enough for the shutter, unless with a large opening and tedious development, and they are slow in developing and very slow in fixing; yet they have yielded good results with me, and price is in their favor.

On one occasion, after a quick cap exposure in-doors, five minutes in developer produced no change, and I saw I had under-timed largely. I washed off and dried the plate (a Chautauqua) and exposed it again, getting a plate without trace of the first exposure. It may be possible I forgot to draw the slide the first time, though I think not, because I should have discovered the omission when I went to put it back; yet even if that were so, the plate was twice in developer. Another plate (a Cramer C) I exposed and finished, after once being in developer by mistake; this one, being more sensitive, was discolored by its first soaking, and so the result was not so good as in the other case. Perhaps it will be new to some that this can be done. I am not ready to advise washing plates in developer before exposure, yet it is not necessary to throw away one which has been so treated by mistake.

Everybody has his pet developer. Mine is eikonogen, which I used through the hot months without ice, having no trouble with it, either by decomposition or otherwise. Hydrochinone has not favorably impressed me thus far, seeming to exhaust much sooner than eiko, and its cost is high, but I have not used it enough to speak positively. Eiko is energetic, holds out well, and stains nothing, while pyro is dirty stuff and liable to stain plates as well as hands. Eiko also shows rather less tendency to fog than pyro, and if the latter has any advantage whatever it is in cost, though I am not quite ready yet to admit that much, and notoriously pyro is hard to keep after mixing. Unlike my pyro friends (some of whom, until I proved the contrary to them, and they were unable to pick out my pyro from my eiko plates, stoutly insisted that eiko could not produce a plate with as perfect and "snappy" a development as pyro), I have tried both fairly, sometimes separately, sometimes mixed together. As eiko crystals must be reduced to powder or be put in hot water, while pyro dissolves as readily as salt, I have brought out several plates, when my eiko proved worn out and my stock solutions had been emptied in, by pouring back into graduate and stirring in a little dry pyro. Those who use eiko over and over may do well to keep a little dry pyro on hand, for resort in such emergencies.

Almost every plate is over-timed in parts and under-timed in other parts; hence some device to equalize density is necessary in order to bring out detail in the stronger lights without spoiling it in the darker parts and the shadows. A less troublesome way than using paper vignettes over the printing frame is to paint the thin parts of the plate, on the glass side, with water-color mixed with a little gum water. This may be new to some.

I used a Taylor & Hobson lens, with Iris diaphragm. I have put it even on work for which it was not designed—largely on portraits and on faces covering the plate—and it has failed on nothing; I do not see how a lens could be better. In cameras I have begun with a Hawk-Eye, and the only defect with that is that one cannot, at times, expand it to take in larger work.

The idea of snapping up things "on the fly" is very attractive, and with the roll film and fixed focus lens one can catch many bits which will not stand long enough to be focused through the screen. On the other hand, although this method will give a central object on the plate, enough definition to show its shape fairly and preserve attitudes, it is utterly impossible to do sharp and fine work all over the plate, carrying detail to the edges and corners, as I have habitually done, without focusing deliberately; do that, and then "press the button" if you like. But no guessing at distances by a scale (unless your view is distant) and no "universal focus" lens can do it. A roll film has its good points, but it has also disadvantages; so I would not advise the beginner to use one exclusively at first.

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Negative Making.

IN THE current number of the *Journal of the Society of Chemical Industry* there is a valuable contribution to the science of negative making by Messrs. Hurter and Driffield. But it appears to us that some of the generalizations of the authors are so wide that they are not justified by their experiments, and that in some cases where they have extended their inferences beyond their experiments they have contradicted the results that have been obtained by others. The authors state that "a negative is theoretically perfect when the amount of light transmitted through its various gradations is in inverse ratio to that which the corresponding parts of the original subject sent out." And for scientific purposes, where the negative is the final result, this is in a sense right, but in the majority of the applications of photography the negative is only a means to an end, that is, it is valuable only in the production of prints. The perfection of a print is a justification of the method by which it was made, and if a negative process and a printing process could be devised in which the errors of one were corrected by the errors of the other we should have negatives which, though imperfect in themselves, were perfect in their suitableness for the making of faultless prints. In this connection the word "perfect" has reference only to the variations in intensity of the same light or light of the same character, and neglects altogether changes of refrangibility, which is practically changes of color. A scientific or absolute perfection that shall include such variations is, we believe, inconceivable. Light is not an abstract quality; it is an effect produced upon the eye, and it depends entirely upon the eye for its recognition. Therefore, it is not impossible that, while the source of luminosity remains in exactly the same condition, the power to appreciate the effect, and therefore the light, may vary. The best that can be done is to take an average or normal eye, and work to that; but at best the word "perfect" needs many qualifications before it can be scientifically applied to any photographic process.

The authors infer from their experiments "that with a well-balanced developer there is a limit to density which depends upon the action of the light," and that the photographer has no further power with regard to density than in deciding whether he will reach that limit or not. This, we believe, agrees with general experience, though some people have the idea that exposure initiates an effect that can be carried on to any extent by development, the decomposition of the silver salt proceeding from particle to particle. There are experiments by Captain Abney that receive a simple explanation on the assumption that this kind of action takes place in collodion plates, but we think that there is much evidence that in gelatine plates there is no image developable except from the bromide of silver that has been directly affected by light, and that the so-called "lateral development" has always been preceded by a "lateral exposure," due possibly to light reflected from the particles of silver salt. But we cannot agree with the authors in their sweeping assertions that "the ratio of densities is given by the light alone, and is not affected by the time of development. . . . This ratio, we find, is altogether unalterable. No modification we have made in developers, or in development, has ever seriously disturbed this ratio of the densities." These statements are founded upon experiments in which the exposures given have varied either from one to four or one to eight, and the results obtained from such small ranges of exposure are not sufficient to justify such general conclusions. We have found experimentally that by varying development it has been possible to secure a perceptible gradation, or to lose it, in the high lights of plates similarly exposed behind graduated screens.

Intensification, the authors have found, does not alter the ratio of densities, but they omit to give the method of intensification that they employed, and the precautions adopted in the operation. We have repeatedly pointed out that the gradation of a negative is altered by the substitution methods of intensification, unless the action of the reagents is thorough, and that an alteration of gradation cannot, with certainty, be avoided in the use of those intensifiers that first increase and then diminish the opacity of the image. We presume that Messrs. Hurter and Driffield have not experimented in this direction, for they state that they know of only one process which totally alters the ratios of density, namely, reduction with potassium ferricyanide and sodium hyposulphite. We have pointed out on more than one occasion that as such a reduction process cannot be thoroughly carried out (or the image would be entirely removed), it must almost of necessity lead to an alteration of gradation. And this alteration is not due directly to the process, but to its incompleteness, an incomplete intensification also varying the gradation.

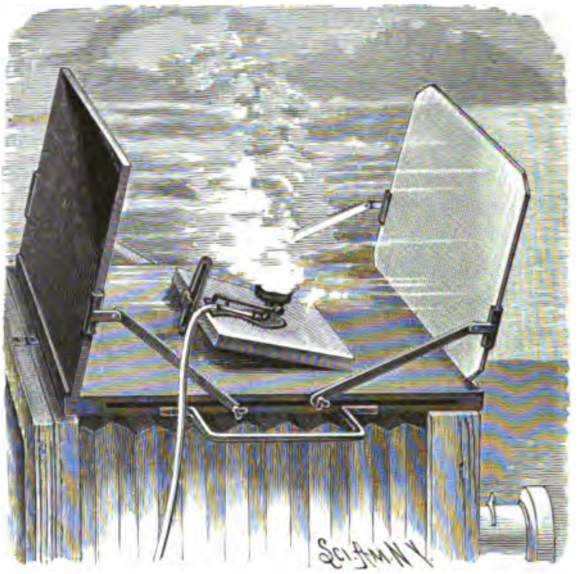
In working with a far more extended range of exposure, the writers of the paper get some very valuable practical results. They find that the exposure may be divided into four periods, and these they name—(1) The period of under-exposure; (2) the period of correct representation; (3) the period of over-exposure; (4) the period of reversal. These descriptions are self-explanatory, except, perhaps, the third, which is restricted to those exposures during which an increase in light fails to produce an appreciable increase in density and is not effective to produce an appreciable decrease in density or reversal. The authors find that a negative, which is perfect according to their definition, can be produced, "but only by so carefully adjusting the time to the intensity of the light that the exposures may fall within the period of correct representation." Thus the clear glass that some photographers so dearly love is again shown to be a fault in a half-tone negative. The value of a plate for general work will obviously depend largely upon the range of the period of correct representation, and the more extended this period is the more latitude of exposure will be permissible. The authors find that thickly coated plates have a great advantage in this matter, and also in obviating the errors in density that result from an unequal thickness of the film. We believe that these observations will be confirmed by every careful worker who uses the more thickly coated plates that have been on the market for the last year or two.

There are several other matters connected with negative making discussed in the paper by Messrs. Hurter and Driffield. They describe the apparatus that they have employed for measuring the density of negatives, and they state that it has very important advantages over the apparatus used for the same purpose by Captain Abney. They have formulated a method of comparing the sensitiveness of plates that avoids the very doubtful operation of determining the highest number that is visible in a series that gradually dies away, and at the same time estimates the useful rather than the absolute sensitiveness. But their method involves the use of a photometric apparatus, and must, we fear, be regarded as scientifically rather than commercially applicable. And they have incidentally made many observations on the subject of development, for which we must refer those interested to the paper itself. —*Chapman Jones in Photography.*

A Flash Light Diffuser.

[Through the kindness of the *Scientific American* we are enabled to present a simple and compact flash light diffuser, the invention of John S. Bridges of Baltimore, Md., which has several interesting points.]

THE SHADOWS caused by the brilliancy of the light, and reflections from polished surfaces, when pictures are taken by flash light frequently make it impossible to obtain the best results. To obviate this difficulty the device shown in the accompanying illustration has been provided, consisting of a base adapted to be supported upon a camera, and holding in position a translucent plate at one end and a reflector at the other end, while between them is an adjustable shelf adapted to support a magnesium lamp, or upon which magnesium may be burnt. The base is composed of two boards, with strips between their ends and one upon one side, so as to form between the boards a shallow pocket to receive the translucent plate and the reflector, whereby the device when taken down may be packed in small space for transportation. The plate and reflector are held in upright position, resting in transverse grooves in the ends of the base, by means of arms pivoted to the base and provided at their other ends with clamps or holders adapted to receive and hold the plate and reflector at the desired inclination. Hinged centrally upon the base is a shelf, provided at one end with a slotted bar and set screw, to raise or lower that end, to give any desired inclination to the lamp base to get the best effect of the light. When this device has been properly adjusted upon the camera to cause the light to be diffused in the direction of the object to be photographed, the quantity of light flashed by the



DIFFUSER FOLDED.

burning magnesium is preserved, while it is made uniform by diffusion, lighting up all points, reducing and mellowing the shadows, and avoiding reflections and interference from the presence of polished objects. The apparatus can be folded into compact form for transportation, as may be seen from the small engraving.

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Awards at the Washington Convention.

OUR ASSERTION in the September number, that had Miss Barnes been known as a professional photographer, her excellent set of pictures of Enoch Arden would have probably taken the grand prize, seems to have been somewhat doubted by our esteemed contemporary, the *Beacon*. When, however, it is known that another award on apparatus was given through the influence of a communication addressed to the judges, by a representative of one of our largest manufacturers, which misrepresented known facts, the supposed unbiased character of such awards will be materially lowered. Furthermore, the letter above referred to was designed to damage and throw cold water on the invention of an amateur, and prevent, if possible, the award being granted to him. Prior to its receipt by the judges, they had been outspoken in favor of his invention as the only new article of real merit which deserved an award. Without investigating into the merits of the case, the judges allowed themselves to be influenced by the letter and awarded a prize to a piece of apparatus which had been exhibited at a previous convention exhibition, but now slightly improved. No motive for this decision has ever been made known; it is supposed, however, that as the invention was that of an amateur, a medal given to him would not have the same trade influence, that one granted a trade house would, hence the latter, though not the inventor of the medaled apparatus, but simply its trade selling agents, were favored. It is a very amusing circumstance to notice that the inventor and patentee of the medaled apparatus was not alluded to, who, according to the conditions of the prize, should have been the only one to have received it. If medals are to be thus lightly treated at future conventions, the inducements for inventors to exhibit their improvements for competition will be very small, and new and valuable features in apparatus will be kept away. We think if the executive committee were empowered to appoint the judges in advance of the convention, and be careful to select good men, awards would be more just.

F. C. B.

THE

AMERICAN AMATEUR PHOTOGRAPHER.

A Monthly Review of Amateur Photography.

VOL. II. BRUNSWICK, ME., DECEMBER, 1890. No. 12.

EDITORS:

W. H. BURBANK. F. C. BEACH, NEW YORK.

CATHERINE WEED BARNES.

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EDITORIAL COMMENT.

Our New Volume.—With the succeeding issue we begin our third volume, which we hope to make more valuable to our readers than either of its predecessors. We shall leave nothing undone to make the AMERICAN AMATEUR PHOTOGRAPHER interesting and instructive in the best sense. A glance at the index to Volume II., in this number, will give abundant evidence of the fullness and variety of the articles which have been given, and it is our best guarantee of what the forthcoming volume will be made.

We do not intend that any matter of general interest to amateurs shall fail to receive the mention its merits may deserve, and, so far as possible, we shall give articles by prominent amateurs on various matters connected with photographic work.

The illustrated sketches of rambles with the camera, which has been a prominent feature of the magazine, will be continued, as will also the illustrated sketches of the more important camera clubs.

Our friends can aid us materially in our work by sending us notes or carefully written articles embodying the results of their photographic practice which may be helpful to others. In this way only may we hope to realize our ideal of a representative, helpful, and interesting magazine of photography.

The Color of the Negative.—On this subject Mr. Frank M. Sutcliffe writes instructively in a recent number of *Photography*. Few, probably, of our younger amateurs are aware of the influence which the negative has on the quality and tone of the print, and in their efforts to produce the tones of the professional toner, they rush wildly and blindly from one toning-bath to another, but to little purpose. It is the negative, not the toning-bath, that is the important factor in the tone of the print, and this governing power of the negative is, as Mr. Sutcliffe points out, largely conditioned by the color of the image deposited or built up in the negative.

In our experience the best color for the negative image is the brownish-gray, so characteristic of the old collodion process, rather than the slaty-gray most common with gelatine plates. The former color seems to give more pleasing tones in the print and a better rendering of natural values.

Mr. Sutcliffe rightly says that a black negative image has the effect of reducing the depth of the scale and so give a photographic rather than a natural rendering of the subject. For this reason the addition of such substances as sulphite and meta-bisulphite of soda and other preservatives to the developer should be made with caution, for the reason that they all tend to produce a black image which, as we have already stated, is to be avoided.

For the same reason many a good reducer of silver fails as a developer of good printing negatives, and the power of a substance to develop a plate quickly is not always a proof of superiority, since the negatives so developed may not prove good printers. All this goes to show that the print must be borne in mind every time a plate is developed.

Winter Work for Amateurs.—By far the larger number of American amateurs find outdoor work almost at a standstill during the winter months, and many of them do little or no photographic work in consequence. But this need not be so. There is ample scope for the exercise of one's photographic skill and knowledge even when the trees are bare and the ground covered with snow. Among the possible outlets for the *enthusiasmus cameræ* during the winter months, we may mention the production of slides and transparencies, enlarging on bromide paper, experiments in interior and portrait work, all of which open up a field of fascinating possibilities which prevents the winter from being stale and unprofitable to those who work it intelligently.

Doctoring Negatives.—Mr. Bain's helpful paper published in our last issue gave several methods of making passable printers from imperfect and faulty negatives. While we believe that the best improver of a faulty negative is a new one made under more favorable conditions, there are cases in which it is not always possible to do this. Under these circumstances. Mr. Bain's suggestions will prove helpful.

Another method of improving negatives, of special value in the case of those which are too thin to yield readily to intensification, is to make a transparency from them, giving the least exposure possible, and using a method of development which will give the greatest density. If necessary, as it generally is with abnormally thin negatives, the transparency is intensified. and a negative is then made from it in the usual way. In the opposite case where the negatives are too dense to print the method must be reversed, a full exposure being given to the transparency, followed by a method of development which will keep back the density as much as possible. In both these ways it is possible to produce creditable negatives from those which are not amenable to the treatment recommended by Mr. Bain.

Mixed Eikonogen and Hydrochinon Developer.—According to Liesegang the following developer combines the advantages of hydrochinon and eikonogen, giving the intensity and clearness of the former, and working with the rapidity of the latter:

Boiled distilled water,	1000 parts.
Sulphite of soda,	100 parts.
Eikonogen,	15 parts.
Hydrochinon,	5 parts.

When the solution is cool, add fifty parts of carbonate of potash.

Temporary Fixation of Negatives.—*La Nature* gives the following formula for a fixing bath to be used for the temporary fixing of negatives when on a tour. The developed negatives are dipped for a few moments in

Water,	150 parts.
Bromide of potash,	5 parts.
Glacial acetic acid,	5 parts.
Alum,	5 parts.

Then washed and dried. Negatives so treated are said to keep without injury for several days, even in the light, but must be fixed in the usual way on arriving home.

Wet Collodion for Lantern Slides.—Mr. Andrew Pringle is contributing a series of helpful papers to *Photography* under the title "Niceties in Slide-Making." With nearly all that Mr. Pringle writes we are in hearty accord, but when he writes of the wet collodion process that it requires a master hand to work it successfully in slide-making, we must differ from him, and we take this occasion of giving a few hints drawn from our own experience, as a possible help to any of our readers who may be thinking of adopting the process for their slide work.

The first necessity to success with wet collodion is that the glass shall be physically and chemically clean. The most certain and expeditious method of producing this result is to give the glass a preliminary treatment in a hot saturated solution of bichromate of potash, acidulated strongly with sulphuric acid. A short immersion of old negative glass in this will enable the films to be easily removed by washing under the tap. When the glass is dry it should be rubbed over with wet tripoli, which is removed, after drying, with a wad of tissue paper. The side to be coated is then rubbed over with a tuft of cotton moistened in weak alcoholic solution of iodine, and finally polished with a wad of tissue paper. After this treatment the glass may be considered immaculate in the matter of cleanliness, but the polished surface must not be touched with the fingers, and if cloth is used instead of paper, only linen should be used; cotton cloth is sure to leave greasy streaks.

The next necessity is a correctly made silver bath carefully kept in working condition. A forty-grain bath made acid with nitric acid, kept in the sun when not in use, and strengthened with silver occasionally to keep it up to strength, is about right with a well ripened collodion. The bath will keep in order longer if the collodion is allowed time to set thoroughly before sensitizing.

The exposure should be full enough to make sure of all the detail and if the usual sulphate of iron developer is used, it should be strongly acidulated with acetic or tartaric acid and made rather less rich in sulphate than is customary for portrait work. The finest results are, however, obtained with the pyro-silver acid developer. We are not giving formulas here, only pointing out a few "niceties" which we have found essential to success.

Working on these lines we recently made something like two dozen wet plate slides from different negatives without a single failure, a thing we have never been able to do with gelatine plates, and with infinitely better results.

Lantern Slides.—Lantern slides will, ere long, be in favor again, as dull weather approaches, and it may be well to point out a few facts that are too often overlooked in connection with the production of this class of pictures. A perfect slide has been defined as having its highest lights clear, its secondary lights with a full range of gradation, and its shadows transparent and full of details, without opacity anywhere. In proportion as a slide fails in any one of these points, it departs from the standard of excellence. It will be evident that there are two great factors which prevent so many slides from reaching the standard. They are, first, the deficiencies of negatives worked from, and second, the absence, in too many instances, of reasonable discretion in the pains taken to correct, so far as may be, those deficiencies. Whatever care may have been used in taking the negative, it is, in the great proportion of cases, impossible to be certain that the requisite qualities will be obtained. We do not mean to insinuate that a special class of negatives is wanted to produce a good slide, for we hold that a negative possessing the characteristics requisite to give a good print by almost any process will produce an equally good slide with the same amount of care. We only want to lay stress on the fact that negatives have a habit of being far short of perfection, but that being so, we want to point out what is too often forgotten, that the defects in negatives can, in the making of slides, be to a very great extent corrected and modified by exposure and development. Having a negative with the high lights dense and the shadows thin, we know, or ought to know, that we must over-expose somewhat, and use a developer rather weak, with rather less than the normal quantity of bromide. On the other hand, a weak negative will want less exposure and more bromide, with the normal alkali. Such a negative will also be best printed from with a less intense light than usual; or, in other words, the printing frame should be held a little further away from the source of light. *Au contraire*, a hard negative, as first mentioned, should be placed nearer the light. Of course, we are presuming that both classes of negatives we mention are full of detail, but have either too great or too little contrast. Negatives which have either of these defects, and in addition have not detail, can never be made to give the necessary gradation by any modification, and it is useless trying to waste time trying to make a good slide from that which is a bad negative.—*Photographic Scraps.*

Miss Barnes' Enoch Arden Pictures.—In response to numerous requests for copies of Miss Barnes' Enoch Arden pictures, we have made arrangements by which we are enabled to furnish the set of three pictures, printed on heavy paper suitable for framing for 50 cents. All orders should be addressed to our New York office.

Mars and Photography.—After careful study of his numerous photographs of the planet Mars, Professor Pickering has come to the conclusion that the southern portion of the planet has just passed through a glacial avalanch of polar ice similar to that of the north Atlantic.

The McKinley Bill.—A probable outcome of the McKinley bill is an advance in the price of photographic materials. The increased duty on albumen paper, glass, and lenses, must necessarily increase the price of these photographic necessities. And, by the way, we do not remember that any of the journals which had so much to say about the iniquity of the increased duty on albumen paper had a word in opposition to the increased duty on lenses. Where is the difference between tweedle-dum and tweedle-dee?

A Correction.—We regret that by one of those unfortunate accidents which will occur now and then, Mr. Pancoast's paper on slide-making, in our last issue, should have contained so many errors. Fortunately the formula for the developer was so badly wrong as to deceive no one, and the correct formula was given in the Editorial Comment. Another error of minor importance was the word "Chame" which should of course have been *Chance's*. We make our apologies to our readers as well as to Mr. Pancoast for the unfortunate manner in which his excellent paper was published.

Re-Touching Medium.—Mr. Julius Wilcox sends the following formula for a re-touching medium:

Spirits turpentine,	1 ounce.
Fir balsam,	1-2 ounce.
Resin,	25 grains.
Acetate of lead,	20 grains.

The ingredients are placed in a bottle and solution effected in a warm-water bath, and 15 grains of camphor are added. The medium is applied to the film where re-touching is necessary by rubbing it on with a soft rag until dry. For re-touching use long pointed leads of medium hardness, and work slowly. Use the lead dry.

A Remarkable Picture.—Mr. William H. Rau has recently exhibited, in Philadelphia, a remarkable panoramic picture of the battlefield of Gettysburg from a negative made from the summit of Little Round Top. The negative, as well as the print, is 18 inches wide by 48 inches long and embraces an angle of about 170 degrees, and was made in a panoramic camera specially constructed for the purpose on the principle of Moesard's panoramic camera. The photograph is to be presented to the Comte de Paris.

Photographs in Colors.—Messrs. Barker & Starbird, 56 Bromfield Street, Boston, now have on exhibition a few specimen prints made by Herr Verecz by his new color process. They are reproductions of paintings, and the colors, although not very brilliant, are stated to be remarkably true to the originals. Although at present the process has no commercial value, the prints are interesting as showing the results of the latest attempt to solve the difficult problem of photography in colors and are well worth seeing.

Reduced Subscription Rates.—We shall be pleased to furnish our subscribers with any magazine published in this country at the publishers' trade rate. If three or four of the leading magazines are wanted, the reduction will be sufficient in many cases to pay for a subscription to the AMERICAN AMATEUR. Those who are contemplating renewing or subscribing to any magazine will do well to send their order to us. This offer is for our subscribers only.

The Enoch Arden Pictures.—An amateur and a professional were the two highest rivals, and only after the most rigid examination did the judges conclude to give the palm of victory to the latter. Many of the best judges of the work have not hesitated to express the opinion that the second choice was made second simply because it was the work of an amateur. It consists of three views, which are now on exhibition at the rooms of the club. The first shows Annie at home, in the pride and beauty of a young matron, with all the little marks of her husband's loving kindness about her, and that husband, leaning over the closed half door, standing outside, but dominating the interior with his presence. The picture embodies all the beauty of that home before the departure of Enoch. The second is one of the saddest things that a poet or artist has ever conceived. A lighted window discloses Annie at the home of Philip long after the end of the battle which has made her the wife of the miller's son. Beside her are the children of Enoch and opposite her, the four most beautifully grouped, is Philip. Just outside, on his knees, his face turned aside, in an agony too strong for bearing, his right hand holding aside the vines which have embowered the window, his left hand grasping the rough cap which he has removed in that silent prayer wherein he consecrates himself and yields up his loved ones, is Enoch Arden. The third picture shows him in the house of Miriam Lane, near to death and telling her the story he wishes confided to his wife only after he shall have gone from earth forever. There is in his attitude and in the grouping about him so much of sadness, so much of truth, that one may well bow down the head and weep with him.—*Chicago Herald.*

The American Annual of Photography.—The forthcoming issue of this popular annual promises to eclipse its predecessors. The *Annual* is a necessity to every worker with the camera, and we will mail it in connection with the magazine for 50 cents, postage paid. This offer is open to both old and new subscribers. Our supply of copies is limited, and those who wish to take advantage of our offer will do well to order at once.

Albumenized Paper.—In bringing to notice the fact that imported albumenized paper has been advanced in price in consequence of the recent exhorbitant advance in duty imposed by the last tariff bill, the *New York Times* has done a service which it is hoped will convince the minds of our legislators, that photographers are hard-working men who do not like to have their profits reduced. There never was a more annoying tax put on photographs than this tax on the paper which must be used by all photographers, especially when it was not asked for by them. Photographs are a species of printing, and are most potent educators ; it, therefore, will appear quite reasonable to permit the paper on which they are printed to be admitted free of duty, as a raw material. It behooves every amateur and professional photographer to impress upon the representative in Congress in their district to call for a repeal of the duty.

A Semi-Monthly Photographic Magazine for $3.00.—Many of our subscribers have asked us to make this magazine a semi-monthly. We do not feel that such a step would be prudent just at present, but we have made arrangements with the publishers of the *American Journal of Photography* which enable us to offer both magazines at the low rate of $3.00. The subscription price of the *Journal* will be increased to $2.00 at the beginning of the coming year, and many improvements will be made. The *Journal* has always been a valuable magazine, and we are sure that we are conferring a favor on our readers by making this liberal offer, which enables them to obtain two of the best photographic monthlies at a cost only slightly in excess of the regular rate of either singly. Subscriptions may be sent to either magazine.

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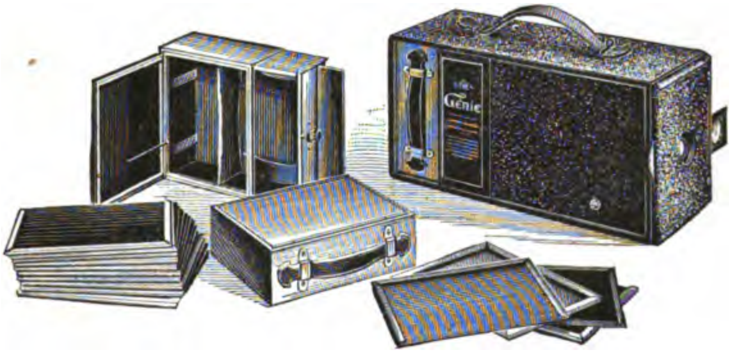
A New Magazine Hand Camera.

THE GENIE.

The spread of the hand camera within the past three years has been so extended that it is now a matter of course that an amateur should have one.

The supply of plate holders necessary to run a camera properly generally costs from a third to a half that of the instrument itself; hence many improvements have been made by which the bulky holders are dispensed with, and a double box or magazine arrangement substituted. Usually the magazine cameras so far introduced have been rather bulky and weighty. We refer, of course, to those intended for dry plates, but lately a new camera, first shown at the Washington convention, called the Genie, the invention of Mr. W. E. Schneider of Washington, has been placed before the public.



THE GENIE CAMERA.
Size A. For Plates 3¼x4¼.

This is the smallest camera in the world for plates of the dimensions stated, the whole outfit taking up a space 3¾x4¾x9 inches. The camera is a light wooden box covered with fine-grain black leather (see upper right-hand figure in illustration); has a first-class selected achromatic lens, a rotating diaphragm, a finder, and a magazine of sufficient size to hold one dozen glass plates or two dozen films. The lens, which is manufactured specially for this camera, has a novel shutter that is quickly worked, by the turn of a screw, for time or instantaneous photography. The finder is arranged so that when not in use it answers as a cap for the lens.

The magazine, which is a plate holder and also a dark chamber for the storage of the plates or films, is made in two sections, one telescoping within the other. The inner section contains the plates arranged in brass plate carriers. A lot of plates inserted in their carriers is seen in the lower left-hand and some unfilled carriers are shown in the lower right-hand of the illustration. The upper left-hand figure shows the magazine partly drawn out, the automatic door open and the end door turned back for receiving series of plates. The figure in the center is the magazine ready for insertion into its place, which is in the back part of the camera. As soon as the magazine is pushed into its place its door opens automatically, uncovering the outermost plate for a shot. The operator pulls out by its strap handle the outer or movable section, which draws within itself the plate that has been exposed. Tilting the camera backward causes the plate to fall back and to be ready for the return of the outer section. This return pushes that plate behind the series of plates in the inner section, and, at the same time, brings a fresh plate into place for exposure. This operation also notes the number of the plate on the register, which is always in sight. After the series of plates have been exposed, the magazine can be readily removed and a freshly-loaded one inserted in its place. There is no danger of the plates being light-struck by handling the magazine outside of the camera. When the magazine is not in the camera the sections are held together by a small bolt at the back. The bolt serves also to secure the magazine in the camera, and permits the movement of the outer section on the inner section, as already described.

The Genie is a convenient all-around camera, by which a thousand or more exposures can be made without going into a dark-room from the time the magazines are loaded till they are unloaded for development of the plates or films.

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Exhibition by the Boston Camera Club.

The exhibition of pictures held at the rooms of the Boston Camera Club during the month of November was brilliantly successful, and reflected much credit on Mr. W. O. Witherell, who got together and arranged the photographs. The collection numbered over three hundred selected pictures, the size being uniformly 4 x 5, except in the case of Mr. Drew, the only member to employ a Kodak. The object was to illustrate the capabilities of the hand camera, and the results were gratifying in the extreme, for we have rarely seen an array of photographs which showed so much pictorial effect, technical excellence, and variety of subjects. It is astonishing how much more successful in true picture making is the adept with a hand camera than the average manipulator of a large apparatus on a tripod, and the reasons therefor are, perhaps, obvious to all.

Most of the exhibitors, all of whom were members of the club, contributed quite liberally, especially the gentlemen whose work excited the greatest interest by reason of its artistic and technical excellences, viz., Mr. O. A. Eames and Mr. Wilfred A. French. The former contributed twenty-four prints (produced with home-made camera fitted with Darlot No. 1 Rapid Hemispherical lens), every one of which was a gem and a study, whether the subject was a group of children disporting themselves in the surf, a line of dashing breakers, a rich cloud effect, a lively marine view, a bit of landscape, a group of cattle, or a quiet wood scene. Refined taste and sentiment, as well as perfect mastery of all technical detail, prevailed throughout his work. Mr. French's exhibit (Hawk-Eye and Phœbus cameras and Euryscopes, No. 00 and No. 0 A, and Darlot Rapid Hemispherical lens), contained the same characteristics, except, perhaps, that his choice of subjects was less varied. One was easily captivated by a lonely boat at low tide, with a wonderful perspective of distant shore and an atmosphere which made one forget that the picture was a mere photograph. There was no need for color. There was, too, a delightful series of views of Camden, Maine, and the exhibitor's famous black cat, "Toby," capriciously lying asleep on his back, regardless of time and place.

Mr. W. C. Brown (Peabody camera and Darlot Rapid Hemispherical lens), sent twenty-eight excellent prints, chiefly distinguished for their soft chemical effect. Mr. C. E. Hubbard (Scovill camera and Beck lens), showed twenty-four pictures taken in the Yosemite Valley region. Mr. H. C. Dunham (Scovill camera and Darlot R. H. lens), thirty-two prints of miscellaneous subjects. Mr. H. P. Chandler (Phœbus camera and No. 0 A Euryscope lens), fourteen prints of children, animals, and landscapes of much merit. Mr. N. W. Starbird (Bromfield camera and Eurograph lens), ten splendid prints, the most interesting of which represented the arrival of President Harrison on his visit to the Hub, the immense crowd of spectators being especially well taken. Mr. W. O. Witherell (Scovill and Hawk-Eye cameras with single, Darlot, and Beck lenses), eighteen interesting views, mostly marines and landscapes. Mr. F. F. Stanley (Hawk-Eye and No. 00 Euryscope lens), eight bright views of Swampscott. Mr. M. L. Scull (Home-Made camera and Darlot lens), twelve miscellaneous prints. Mr. W. H. Drew (5x7 Kodak and B. & L. lens) exhibited sixteen really excellent pictures, but the uneven quality of the film used seriously interfered with the good appearance of the prints. The Blair Camera Company contributed a remarkably fine set of twelve prints, taken in the Yellowstone National Park with Hawk-Eye camera and T. & H. lens. In point of clearness they eclipsed everything in the room, owing, no doubt, to the exceptionally clear atmosphere prevailing in the far West.

The remaining exhibits were about evenly divided among Mr. I. D. Merrill (Hawk-Eye with Darlot R. H. lens), Mr. Charles A. Robbins (home-made camera with Darlot R. H. lens), Mr. Joseph A. Frizzell, Mr. W. G. Reed, Mr. H. A. Huff (Bromfield camera and Eurograph lens), and Mr. W. O. Witherell (Hawk-Eye and single lens).

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The Primuline Process.

By T. C. Roche.

[Abstract of a paper read before the Society of Amateur Photographers, November 11, 1890.]

Ladies and Gentlemen,—A description of the Primuline or the Diazotype Process has lately appeared in the English photographic journals, and I have made a few successful experiments with it. Primuline is an aniline dye. You take aniline dye, which you can get at No. 98 Liberty Street, then take an evaporating dish of some kind and put in it a certain amount of hot water. A few grains of dye is sufficient, simply enough to give the water a slight tinge. I used about 15 or 20 grains. Keep the water hot by a gas lamp or on a stove and stir up the solution with a rod until all the dye is dissolved; then filter and pour the solution into a clean dish. While warm you immerse the paper, two or three sheets at a time, turning them over until they get thoroughly soaked. It usually takes from five to ten minutes. The lemon-colored paper is next removed to a clean flat dish and washed well a few minutes under a tap, then it is immersed in the following solution, two or three sheets at a time, until it turns a salmon color:

Nitrate of sodium, ...	60 grains.
Muriatic acid, ...	20 drops.
Water, ...	20 ounces.

The paper is then washed and hung up to dry in an ordinary yellow light, and becomes very sensitive. If it is now put in the light the paper will bleach out perfectly white. Any design, such as lace, leaves, tracing, or a transparency may be put in a printing frame and the paper exposed behind it, until the color of the paper looks bleached or perfectly white wherever the light can act on it. The best results depend on the thorough bleaching. In a bright sun about a minute's exposure is enough. When a positive is used you get a positive print, and a negative from a negative. It is fitted particularly for use with dense line negatives or positives. Printing by the process is about twice as rapid as in the blue print process.

After exposure wash the print lightly in water, then immerse it in a six-grain to the ounce solution of the eikonogen developer, and in a few minutes the color will change to a purple blue. A plain six-grain to the ounce solution of pyro will develop a brownish-red tint. After developing the prints should be well washed in running water. I find the richer the paper is in sizing or gelatine the better the result. The process does not give clear whites. This may, however, be done by employing some kind of bleaching fluid or solution, not as yet discovered. I have not as yet found out how long the prepared paper will keep before using.

Instead of sensitizing paper, silk, cotton, muslin, linen, or any article of a similar character may be treated. Thus, monograms can be printed on the corners of handkerchiefs or napkins which will stand washing. There are a variety of uses to which the process can be put.

ENGLISH NOTES.

BY THOMAS BOLAS.

Half-tone Etchings on Glass and Metal Plates.—Vitrification of Pigments on the Former.—A somewhat remarkable process and one very easily carried out is due to Mr. A. M. Jacobs, a process not only adapted to the production of etched printing-plates on copper or steel, but easy and fairly certain for the production of half-tone etchings on glass, suitable for window and other decorations. The sensitive material which, like the bitumen in the early process of Niepce, forms the resist against the acid, is prepared as follows: One hundred grammes of ordinary pine resin (colophony) are boiled with 10 grammes of caustic soda, 33 grammes of carbonate of soda, and 1 litre of water until all is dissolved, which operation may take one or two hours. Another litre of water is now added, and next a solution of 7.5 grammes of methyl violet, 3 blue shade, in half a litre of water is added. The solution, being cold and filtered, is precipitated by the gradual addition of 60 grammes of magnesium sulphate dissolved in about 250 cubic centimeters of water. The precipitate of colored "resinate" of magnesium is now collected on a cloth filter, washed well with cold water, and dried at rather a low temperature. Several other aniline colors may be used in the place of the methyl violet, but there is no special advantage from the etching point of view. The resinate precipitate is sensitive to light, hence its precipitation and drying should take place in such a feebly lighted room as is used for printing. If the dry precipitate is now merely dissolved in a mixture of benzole and chloroform and plates, coated with this mixture and dried, are exposed under a transparency and developed with a mixture of turpentine and benzole, we obtain results much the same as those obtained by the ordinary bitumen process, the ground dissolves away where the light has not acted, leaving the plate bare for etching in these parts; but in order to obtain full gradations of tone and a satisfactory adhesion of the resinate film to the plate an admixture of India rubber is needed; a caoutchouc solution being prepared as follows: 50 grammes of masticulated but unvulcanized rubber is dissolved in 2,000 grammes of carbon bisulphide, frequent agitation and breaking up of the swelled masses being required in order to ensure something like complete solution and 120 grammes of benzole is now added.

The coating preparation is now made by dissolving 20 grammes of the resinate in 130 cubic centimeters of benzole, mixed with 70 cubic centimetres of chloroform. Of the caoutchouc solution 120 cubic centimeters are now added. After a few days' keeping (in the dark) the solution is filtered. The glass or metal plates must be thoroughly cleaned, and after being coated with the preparation they must be thoroughly dried, and the exposure required is long; sometimes as much as two or three hours in direct sunlight. An exposed plate should not be developed till it has attained the normal temperature. It is then covered in a dish with a mixture of 1 part of benzole and 3 of oil of turpentine, and when the solvent action is complete, the plate is bordered with soft wax and etched; moderately strong hydrofluoric acid being used if the plate is glass, and nitric acid or perchloride of iron being used if the plate is of iron (steel) or copper. In all the operations with benzole or carbon sulphide, care must be taken not to work close to any fire, as inflammable vapors are given off at ordinary temperatures.

The etching being complete the etching-fluid is rinsed off, and the now surplus ground can be scrubbed off with a stiff brush charged with oil of turpentine. Should it be wished to vitrify the image on the etched glass, the cavities can be filled in with an easily fusible enamel color, and fired in a muffle, like ordinary painted glass.

Vitrified Photographs on Enamel Plates, and on Porcelain.—The *British Journal of Photography* points out in a leading article that the enameled copper tablets which are so often used as bases for vitrified photographs, are often in themselves so subject to change by atmospheric influence that a very short exposure to the outer air or rain serves to disintegrate the surface. Indeed, the paper in question goes so far as to doubt whether it is possible to make an enamel which shall flow readily at such a heat as the copper plate will stand, and yet be stable against the atmosphere. It is pointed out that the enamels which are fluxed upon copper are generally so rich in oxide of lead that the surface slowly darkens, and ultimately blackens, under the influence of a solution of sulphide of ammonium. It is, moreover, pointed out that if the ordinary metallic image, consisting of palladium or iridium, instead of being vitrified on enamel at a low red-heat, beyond which the enamel worker dare not go, is fired at a full white-heat upon a tablet of hard porcelain, one obtains a photograph far more durable than when upon enamel. Any one understanding the working of the carbon process can readily vitrify pigment photographs upon porcelain, and the *British Journal* gives a formula for making the pigmented tissue. Soft gelatine, such as is sold for strengthening soup, 4 ounces, soak and dissolve in 9 ounces of water; then add 2 ounces of white sugar and 20 drops of ammonia. The pigment is now stirred in, and it may consist of 3 ounces of the finely divided peroxide of iron sold as Jeweler's Rouge, or instead of this an underglaze pottery color of the desired tint may be used. Paper is now coated with the mixture and we have a tissue which is sensitised and used like ordinary carbon tissue; the image, when developed on any article of hard porcelain, being fired in a muffle at a sufficiently full white-heat to cause the metallic pigment to fairly sink into the surface.

An Amateur Photographer's Auction.—The members of the Hackney Photographic Society recently organized a re-distribution of apparatus as was in the hands of such persons as did not require it, the function taking the form of an auction. The lots were put up and rapidly knocked down by Mr. H. J. Beasley, who acted as auctioneer, and in the end many members found that they had got rid of things in no way required and obtained possession of things wanted. A sale and exchange register is kept by many of our societies, but if one may judge by the Hackney experiment, a periodical auction might form a useful feature of photographic society proceedings; the advantage being that articles for disposal are all brought together at a specified time, and apart from the auction sale, direct barter can then conveniently take place between members.

Treating Negatives Stained with Silver.—There are few who have not had valuable negatives spoiled by silver absorbed from the printing paper, and who have found the unsatisfactoriness of such treatment as a second hypo bath or a weak solution of potassium cyanide; although sometimes the stains may be almost or quite removed by such means. Mr. T. M. Laws, however, makes a new departure in this matter and it is based on two facts. First, a given amount of opacity is produced by a smaller amount of silver in the case of the stain than in the case of the true image; and secondly the stain is more readily whitened by mercuric chloride than is the image. The varnish being removed by alcohol the plate is flooded with an aqueous solution of mercuric chloride, the action of which is to whiten the image by converting its metallic silver into chloride of silver, the mercurious chloride, or calomel, formed by the reduction of the mercuric chloride, being deposited at the same time on the image. The stains whiten first, and if the action of the mercuric chloride be stopped at this stage by washing the plate, the general vigor of the image is not affected, while the effect of the stains become so slight as in most cases to be unnoticeable. If the action of the mercuric chloride be allowed to continue further, the whole image is weakened but the stains are weakened in a much greater proportion. The best results, however, are obtained by stopping the action of the mercuric chloride before the image is perceptibly affected.

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SOCIETY NEWS.

[Under this head we propose to publish all society matters of scientific or technical value, which are of interest to amateurs generally. Our space will not allow the insertion of mere routine matters. Reports of Field-Days, Exhibitions, etc., will be gladly received and inserted, if received previous to the 20th of each month. Secretaries will confer a favor by forwarding early reports of meetings.]

The Fourth Annual Joint Exhibition at New York.—The Society of Amateur Photographers of New York issues the following circular intended for foreign exhibitors:

THE FOURTH ANNUAL EXHIBITION

Of the Photographic Society of Philadelphia, the Boston Camera Club, and the Society of Amateur Photographers of New York, open to all photographers—American and foreign, will be held under the auspices of the Society of Amateur Photographers of New York, at the Fifth Avenue Art Galleries, 366 and 368 Fifth Avenue, between 34th and 35th Streets, New York, U.S.A., May 25 to June 6, 1891.

ANNUAL EXHIBITIONS.

The agreement heretofore existing between the New York, Philadelphia and Boston societies to hold annual exhibitions under joint rules and a joint management, was canceled in October, 1890, and a new agreement adopted whereby exhibitions are to be held in rotation annually in the respective cities, but under the *exclusive management of the local society*, and under such regulations and rules as it may adopt. Medals or diplomas will be issued in the name of the society holding the exhibition.

The Board of Directors of the Society of Amateur Photographers in October, 1890, appointed a special Committee of Arrangements to select judges and manage the exhibition to be held in New York, May 25 to June 6, 1891, inclusive, and also adopted the following conditions and rules for the exhibition.

CONDITIONS.

1. Medals shall be awarded by a Board of Judges, consisting of three persons chosen by the Committee of Arrangements with special reference to their knowledge of *Artistic*, *Technical*, and *Scientific* photography. No other awards of any kind shall be made.
2. Medals shall be awarded *only* "for Artistic, Technical, or Scientific excellence." In making their selections the judges shall give due recognition to work in any of the various branches or processes of photography which may show unusual merit. The aid of experts may be called in when special information is necessary.
3. The entire number of awards is left to the discretion of the Board of Judges, dependent upon the amount of work of high merit exhibited, but shall not exceed twenty-five. Three of these shall be for excellence, one in each of the following classes: *a.*—Lantern Slides (set of six, negative and positive, by exhibitor). *b.*—Applied Photography—Scientific or Technical. *c.*—Excellence in apparatus. Awards may be made for an entire exhibit, or for any part thereof. The judges may specially designate any particular picture for which a medal is given.
4. All photographers are at liberty to compete, but the judges are instructed to give preference, other things being equal, to work done entirely by the exhibitor.
5. The members of the Board of Judges shall not compete for awards, nor be connected in any way with the management of the Exhibition.
6. The decision of the Board of Judges shall be final.

RULES.

1. No picture which has once been exhibited in competition at a previous annual exhibition held under the auspices of the New York Society shall be again admitted for competition.
2. No picture will be received "for exhibition only," unless by special consent of the Committee of Arrangements.

3. No pictures which have taken prizes elsewhere shall be so designated, until after the awards have been announced.

4. All pictures must be framed (with or without glass, at the option of the exhibitor). Pictures from *foreign exhibitors* should be sent by *mail, unmounted.* They will be mounted for exhibition by the Committee of Arrangements, free of charge. Foreign exhibitors, so desiring, can send their pictures framed by express (prepaid).

5. The Committee of Arrangements shall have the right to reject the whole or portions of any exhibit offered; and if, in order to fairly apportion the space at their disposal among the various exhibitors, it becomes desirable to leave any pictures unhung, the rejections shall be made at the option of the Committee.

6. Entries of all exhibits must be made *in duplicate*, on blanks issued by the Committee of Arrangements, giving, for catalogue purposes, etc., information on the following points: Number and size of frames; amount of wall space required; total number of pictures; subject or title of each; lens and plate used for negative; if for sale; price; name, address, and society of exhibitor.

7. The exhibitor's name and address, also a number corresponding to the descriptive number upon the entry form shall be clearly written on the labels provided, which shall be attached to the *back* of each frame.

When two or more prints are mounted in one frame, a designating letter shall be placed under the center of each print, and all letters so placed shall appear in the entry form opposite the title of their respective pictures. *Nothing else* may appear in *front* of frame except title of picture and exhibitor's name.

8. No picture may be withdrawn before the close of the Exhibition.

9. All pictures must be sent at owner's risk, prepaid and delivered to the Committee of Arrangements at the place by them indicated, and return charges collected by carrier.

10. The Committee will not be responsible for any loss or damage that may occur to exhibits while in its charge, but will use all reasonable care to prevent such occurrence; and at the close of the Exhibition will repack each exhibit and ship as directed by the exhibitor.

11. Advertising in any form in connection with an exhibit is strictly prohibited.

12. A charge shall be made for wall space at the rate of twenty-five cents per square foot (the minimum charge being one dollar) to all except foreign exhibitors, and members of the Photographic Society of Philadelphia, Boston Camera Club, and the Society of Amateur Photographers of New York. The amount of charge for wall space must be enclosed with entry form to the Committee of Arrangements. If any of the pictures entered are not hung, a due proportion of the charges will be returned. A commission of ten per cent. on all sales will be retained.

13. Models of photographic apparatus must have a removable card attached, containing the name of the exhibitor and the number to which it refers on the *entry form.* The exhibitor should also fasten a small adhesive printed label to the exhibit containing his name only. Each exhibitor is required to write on the entry form supplied by the Society, a concise description of each piece of apparatus.

14. A charge of three ($3) dollars will be made for each piece of apparatus entered by members of the Photographic Society of Philadelphia, the Boston Camera Club, and the Society of Amateur Photographers of New York; non-members will pay five ($5) dollars which, in all cases, must be enclosed with the entry form, otherwise the apparatus will not be received

15. Apparatus and appliances that have been shown at any previous exhibition, or those that do not embrace some points of special interest (to be mentioned by the exhibitor on the entry form) may be refused.

16. Lantern slides must not exceed 3¼ inches high, and the diagonal line of the mat opening must not exceed 3⅝ inches in length. It is suggested that the title label be placed at the right-hand end, and a thumb label on the lower left-hand corner of the cover glass, as the picture is viewed in its natural position.

17. Lantern slides will only be eligible for competition and award when both the negatives and slides are the work of the exhibitor. Not less than six should be sent by any one exhibitor for competition. A list of the slides and particulars as to the process employed should be stated on the entry form.

SUGGESTIONS.

Lantern Slides.—Special endeavors will be made by the Committee of Arrangements for the competition and exhibition of slides by the Oxyhydrogen Lantern four times during each week of the Exhibition. Optical Lanterns, operated with gas or electric light, will be admitted for competition under the head of apparatus, and the exhibitors will be allowed to show their working during the exhibition, by and with the consent of the Committee of Arrangements.

Negatives.—Negatives and transparencies may be entered for exhibition, and should be suitably framed.

Photo-Mechanical Prints and Photographs colored by scientific or mechanical means will be admitted for exhibition but not for competition, and should be limited in quantity.

Special Processes.—Any applicant submitting illustrations or specimens for exhibition, made by a special process will be requested to furnish a description and particulars concerning the same.

Entry Forms.—Blank entry forms and blank labels to be placed on the back of frames will be furnished on application. See Rules 4, 6, 7, and 12.

RECEPTION OF EXHIBITS.

Foreign exhibits should reach New York by May 1, 1891, to allow ample time for mounting. All exhibits (including pictures, negatives, transparencies, lantern slides, apparatus, and appliances, etc.) must be delivered (carriage prepaid) on or before May 11, 1891, addressed to Committee of Arrangements, 113 West 38th Street, New York.

CORRESPONDENCE.—All correspondence respecting the exhibition, blank entry forms, and frame labels should be addressed to

F. C. BEACH, *Chairman Com. of Arrangements,*
113 West 38th Street, New York.

F. C. BEACH, A. L. SIMPSON, C. C. ROUMAGE,
Committee of Arrangements.

New York, November, 1890.

The Society of Amateur Photographers of New York.—Tuesday, November 11th occurred the regular monthly meeting of the society with the Vice-President, A. L. Simpson in the chair and F. C. Beach as Secretary. Following the reading of the minutes was an interesting demonstration of the new Primuline printing process by T. C. Roche (see page 473), at which he showed several specimens. After developing a few prints he left a small quantity of the primuline for trial among the members. He also explained a process of sensitizing paper with a ferric-oxalate solution and nitrate of silver, the details of which will be explained at some other time. Mr. Roche was thanked for bringing the process before the society.

Mr. D. C. Hoover exhibited a model of his exposing-box for exposing continuous strips of bromide paper in succession under a negative. It was illuminated by a kerosene light placed at one side and reflected upward upon a negative by a mirror, the aperture for the light to pass through being controlled by a shutter. There were several ingenius features for regulating the amount of paper to be fed forward and for guiding separate sheets of paper. The lights were turned out, all except one or two red lights, and three or four exposures made and developed. By giving a uniform exposure to each print it was very easy to develop them satisfactorily. The apparatus appeared to operate very smoothly. It will hold a strip of paper ten yards long.

Mr. F. C. Beach exhibited a model of a grooved box for holding and transporting lantern slides, which he thought was an improvement on the wood-grooved boxes now in use. Grooves were cut transversely in the sides of the box by a saw and in these were inserted strips of thin rubber belting ⅜ inch wide, which were glued in. They were quite rigid, yet yielding enough to form a cushion for the side of a glass slide when submitted to any sudden shock. A better plan was to have a strip of rubber cast, similar to rubber mats, capable of holding fifty slides, and tack or glue the strips to the inner sides of the boxes. He was having a mold made for this purpose. With such construction the capacity of each box would be increased at least one-third, while the slides would be protected from breakage on each side by a cushion of rubber. Occasionally in wood-grooved boxes the weight of the slides sometimes cracks or breaks off the thin wood divisions, then the slides come in contact and are damaged. The rubber-grooved side holds fifty slides in about eleven inches. Mr. Beach's idea was very favorably commented on. He also showed a model of a 3¼ x 4¼, the Geni Detective magazine camera, invented by W. E. Schneider of Washington, D. C., which possessed several good points; for a description see page 471. It was extremely compact, light, and very positive in all its movements.

Mr. Simpson explained a new box for equally illuminating negatives for enlarging purposes. It had in each end a 200-candle power incandescent electric lamp which, by reflectors, illuminated the white interior back surface of the box very uniformly. The reflected light from the back of the box thus evenly lighted every portion of the negative.

Mr. A. P. Smith showed his method of producing a lantern slide mat by development, consisting of taking a mask plate with the center opaque the same size as the mat opening and giving the sensitive plate a preliminary short exposure behind it, then exposing the sensitive plate a second time behind a negative or in the camera. On development the mat and picture appear together and the trouble of making the mat is avoided. He further demonstrated how he could clarify a dark colored solution of eikonogen by passing it through a specially chemically prepared filter two or three times. He declined to tell how the paper filter was treated, but promised to as soon as the improved white kind of eikonogen was placed on the market. His solution was extremely clear and insured good results.

Mr. Dexter H. Walker, being present, was called upon and spoke of the cordial greeting which had been given him after a long absence abroad, of over two years. He thought, so far as his observation extended, while abroad, that the society had the best appointed rooms of any organization he knew of. There were very few truly amateur societies in the old country; as a rule they were mostly made up of professional or scientific men, who utilize photography in some professional way. He urged the society to go on with its good work and cautioned it not to get in debt. Mr. Simpson spoke of Mr. Walker as being one of the founders of the society and thanked him for telling the members what he thought of it.

During the executive session which followed, communications were read from J. H. Harvey, Honorary Secretary of the Amateur Photographic Association of Victoria, Australia, relative to an exchange of lantern slides, and Mr. Wallace Dickson, Secretary of the Syracuse Camera Club, in regard to the meeting of delegates to a preliminary conference of amateurs in New York, at the society rooms, on December 4th. Five delegates to represent the society officially were elected as follows: James H. Stebbins, Jr., Alfred L. Simpson, Thomas K. Burton, F. C. Beach, and Dexter H. Walker.

The Secretary read a circular of the International Photographic Exhibition to be held in the *salon* in Vienna, Austria, under the patronage of her imperial and royal highness Archduchess Maria Theresia, from April 30 to May 31, 1891, under the management of the Vienna Amateur Photographers' Club. Members of the society were invited to send exhibits. Miss C. W. Barnes showed a phototype picture of the Archduchess, who had applied for a photograph of Dr. Ehrmann of the *Photographic Times*, as she is much interested in photography. Thinking she might appreciate more highly a picture made by a lady amateur, Miss Barnes ventured to make a portrait photograph of the doctor in his own laboratory and studio. She arranged the lighting, made the exposure, and developed the plates, and was gratified to obtain a likeness which is very highly regarded by Dr. Ehrmann and his friends. As a member of the society she will thus convey to the Archduchess the kind of work American amateurs can produce. A copy of the photograph was shown, and appeared to be equal to any made by professional photographers.

Attention was called to the International Photographic Exhibition to be held in Liverpool, England, from March 6 to April 4, 1891, and members were invited to exhibit. The Secretary stated that the conditions and rules for the joint exhibition to be held in New York, May 25 to June 6, 1891, inclusive, had been adopted by the Board of Directors and that the foreign circulars soliciting foreign exhibits would shortly be issued.

It was probable arrangements would be made to photograph the launching of the United States cruiser "Maine" on November 18th, from the Brooklyn Navy Yard. It was suggested that the society undertake a photographic survey of New York City, which should occupy several years. The upper part of the city was selected as the first portion to begin on, and Mr. William Murray was named as one who would be a leader to take Saturday afternoons for short excursions. Members were invited to co-operate.

Mr. Robert A. Dayton, on behalf of the Board of Directors, presented and read the draft of a proposed new constitution, approved by the Board, which will be acted on at the December meeting. No radical changes are suggested, except that corresponding members are to be omitted and the reserve fund clause stricken out. One excellent point is that the duties of officers and committees are very clearly defined. The matter was laid over till the next meeting, after which the meeting adjourned.

Field Excursion.—A few members went on a very pleasant excursion November 18th, to witness the launching of the armored United States Cruiser "Maine" from the Brooklyn Navy Yard, New York. The steam tug, Henry Pulver was engaged and left pier 27 East River a few minutes before eleven o'clock in the morning. The day was bright and clear with a west wind blowing half a gale. Floating on the stern of the tug was the white flag of the society. Views of the war ships decorated with flags were made, and at 12.43 P.M. the launch was photographed, quite successfully, though intervening vessels intefered somewhat with the view. The "Maine" was painted a dark red, and, as she went in a northerly direction, most of the cameras had to point south, or very nearly towards the sun, which produced silhouette pictures of her hull. She glided off of the ways most gracefully. In a few minutes after the launch the party was landed again at pier 37, after a most enjoyable trip. One man lost his hat overboard, and the wind also whisked off into the water the top of a canvas camera box, both of which were picked up by accommodating row boats. The party consisted of F. C. Beach, A. L. Simpson, T. J. Burton, R. A. B. Dayton, Mr. Parsons, Mr. Hibbard, Mr. Kiersted, Mr. Slater, Mr. H. N. Treman, and C. A. Mann.

New York Camera Club.—Much commendation is due to the club for the enterprise shown in its recent exhibition of pictures by photo-mechanical printing processes. The exhibition was in every way a decided success and the work of seventeen exhibitors was shown, thus affording an opportunity of judging the relative artistic value of the different methods. The value of the collection would be increased if it were made a permanent exhibition, and thrown open to the public at stated times. The comprehensive description of the various processes prepared by Prof. Charles F. Chandler and presented to each visitor, contains much information regarding the methods in common use.

New Orleans Camera Club.—The annual meeting was held Wednesday evening, November 5th. The reports of the various committees showed the club to be in a prosperous condition. The members now number 107 and the cash balance is $147.00. The newly-elected officers of the club are: President, Mr. Horace Carpenter; Vice-President, Mr. A. L. DeQuesnay; Secretary, Mr. R. S. Charles; Treasurer, Mr. P. E. Carriere. Standing Committees: Governing Committee—T. W. Castleman, L. E. Bowman, Reeves Lewis, S. L. Mitchell, E. A. Shields, and the four standing officers of the club; Membership Committee—Dr. W. R. Mandeville, chairman, A. C. Frietag, Reeves Lewis, G. H. Dwyer, and B. Black. Lantern-Slide Committee—L. E. Bowman, chairman, Guy Carpenter, T. W. Castleman, R. H. Palfrey, and Reeves Lewis. Finance Committee—Mr. S. L. Mitchell, the chairman, will select the four members of this committee. The club has adopted a new feature, which is commended to other clubs, which admit ladies to membership. This is the appointment of a lady custodian whose presence at all times in the club room makes the visits of ladies more agreeable. Miss C. A. Huard is the custodian of the New Orleans Club.

An exhibition of photo mechanical process work has been held by this club during the month of November. Quite an elaborate catalogue was gotten up describing the processes and the pictures. Most of the work was reproductions of well-known works of art. There was a large attendance.

Albany Camera Club.—The annual meeting was held Friday, November 7th. W. W. Byington was re-elected President and Charles L. Palmer, Secretary and Treasurer. That it is the intention of the members to put their organization in the front rank of camera and photographing clubs in the State is very evident. It was decided to rent the rooms recently vacated by the Unconditional Republican Club at the corner of North Pearl and Steuben Sts.

The new quarters will be handsomely furnished and transformed into a model club-room. A hard wood floor will be laid, to be covered with rugs. T. C. Leutze and F. G. Mather were named a committee to see that the new rooms are papered and painted to correspond with the handsome furnishings. J. S. Van Buren, President Byington, and Secretary-Treasurer Palmer were appointed a committee to attend to the moving of the club's effects. The members have among them probably 1,500 lantern slides, of which not more than 300 have been shown. Many of these represent surprisingly good work. The club will give numerous private and probably two public exhibitions during the winter. It was decided that a dark-room should be prepared in the new quarters, with all the modern facilities for developing. An enlarging and reducing camera for the purpose of making lantern slides will form part of the furniture. A lime or electric light lantern will also be procured, so that any member of the club may show to his personal friends his lantern slides and those belonging to other members, on any evening in the club rooms. Six names were proposed for membership. If they are favorably acted on, as is probable, an amendment to the constitution increasing the limit of membership, now fixed at forty, will have to be adopted.—*Albany Morning Express.*

Chicago Camera Club.—During the latter part of November the Boston Camera Club's collection of Mr. H. P. Robinson's pictures, already noticed in these columns, has been on exhibition and attracted much favorable notice. At the regular meeting, held November 18th, Mr. E. Burton Holmes entertained the club with a description of a recent trip on the continent illustrated by slides made from his own negatives. The set included the ocean voyage and the principal Italian cities. The Executive Committee announced that they have secured the services of a competent photographic expert to take charge of the rooms and to give instruction in photography to the members. New scenery and accessories and a large portrait lens have recently been added to the equipment of the rooms.

The Boston Camera Club.—A recent visit to the club rooms disclosed the fact that many important improvements have recently been made, notably in the developing room which, as now arranged and equipped, is second to none in the country. At a recent meeting the limit of membership was increased and the admission and annual charges increased.

The American Lantern Slide Interchange.—The contributing societies to this Interchange for the season of 1890-91 are the "Photographic Society of Philadelphia," "The Society of Amateur Photographers of New York," "The Pittsburgh Amateur Photographers' Society," "The Cincinnati Camera Club," "The St. Louis Camera Club," "The New Orleans Camera Club," "The Newark Camera Club," "The Syracuse Camera Club," "Pacific Coast Amateur Photographers' Association," "Detroit Camera Club," and "The Buffalo Camera Club." The slides contributed by these various organizations will be examined by the executive committee in New York about December 1st, and will then be started on their rounds of the clubs. In some cases the work of two clubs will be sent in one box.

Foreign lantern slides, 180 in number, have been received from the English journal *Photography*, and will be sent in two sets, ninety in a set, on application by the manager Mr. F. C. Beach, 361 Broadway, N. Y. Slides from Vienna, Austria, have also arrived and will soon be ready to be sent. They will be packed in Mr. Beach's new rubber grooved box. Two sets of 100 selected American slides will go abroad early in December, one to England and one to Vienna, which, after being seen in the different countries, will return here. An exchange of lantern slides is being arranged with the Melbourne, Australia, Amateur Photographic Association.

The Camera Club of Hartford.—The regular monthly meeting was held Tuesday, November 11th. As this was the first meeting in the club's new quarters, the occasion was taken for the formal opening of the rooms. After a short business meeting the time was spent, by the members and invited friends, in examining the rooms and apparatus, and in social chat. At half-past eight the lights were put out and, with the aid of the lantern and some photomicrographic slides, Dr. Arthur J. Wolff entertained the club with a highly interesting entomological lecture. The slides were entirely the work of the lecturer and comprised many strange and curious objects. That is, they were strange and curious when viewed under the combined magnifying power of the microscope and the lantern, though we are familiar enough with most of them in nature. Noticeable among the specimens were the eye and the tongue of a common house-fly, the lancets of a mosquito, the tongue of a butterfly, the sting and poison bag of a honey bee, the head of a spider, and many others of equal interest. A light lunch was then served, the discussion of which, as well as of other subjects, consumed the balance of the evening.

As the club is now situated, the members will have every opportunity for following their own particular line of work. The dark-room is commodious and well ventilated, lighted by electricity, with individual lockers for the use of members. Opening from the dark-room is the enlarging room with an unobstructed north light, and equipped with a No. 3 enlarging easel presented by the Eastman Company. The reading-room and library adjoins the enlarging room, and opens into the general assembly room through an archway draped with portiers, so that when occasion requires the two rooms can be thrown together. In the large room, with a south light, is our reducing apparatus for slide making, while near by is the burnisher. The membership list now numbers over seventy, and is steadily growing; in fact the prospects of the club were never so bright as at present, nor the interest and enthusiasm of the members so general.

Providence Camera Club.—Mr. J. A. Miller, Jr., has been elected corresponding secretary in place of Mr. J. E. Davison who will spend the winter in Florida. The club has done but little work so far this season, but expects to get under way soon. A set of slides has been prepared for the New England Slide Interchange, and several exhibitions of the "Illustrated Subjects." Series will be given during the winter.

The Old Colony Camera Club, Rockland, Mass.—The club entertained its friends with an exhibition of home-made slides on Wednesday evening, November 12th. The club is making progress and the members manifest much interest in the meetings.

Lowell Camera Club.—The second annual exhibition of photographic work by the Lowell Camera Club, held at Morrill's Studio from November 11th to 15th inclusive, was a success, and has given the public a better idea of the work of the club than would be possible in any other way. There were twenty-two persons represented by three hundred and twenty-five prints of all sizes, from No. 1 Kodak to 8x10 inches. It was the general opinion that the quality of this year's work was superior to that of any previous exhibition. This is the more satisfactory because it was the work of but one year, while the previous exhibitions by Lowell amateurs have generally been the work of two or more years combined. A new departure was made this year in awarding diplomas in the following classes: 1, landscape and marine; 2, portraits; 3, animals; 4, genre and figure composition; 5, hand camera work. The following persons were awarded diplomas: William P. Atwood, class 1, landscape; John J. Coggeshall, classes 1 and 3, marine and animals; G. A. Nelson, classes 2 and 4, portrait and genre; and Miss Florence H. Whittier, 5, hand camera work. Honorable mention was given to pictures in the exhibits of A. S. Guild, F. B. Murphy, W. B. Parkhurst, H. M. Thompson, Miss Helen A. Whittier, Rev. George Batchelor, and W. H. Dodge. The judges were Frank Russell, A. A. Ordway, and W. P. Phelps.

The new illustrated subject by the club, entitled "Lowell Illustrated," that is to be contributed to the New England Lantern Slide Exchange, was shown before a large and appreciative audience in the Y. M. C. A. Hall, Thursday evening, November 20th. The set is limited to fifty slides, and shows Lowell in its work-day dress. Some of the most interesting objects of historic interest are included, but the mills, exterior and interior, form the principal part of the set. The descriptive text was written and read by Mr. W. P. Atwood. The adjourned annual meeting was held immediately after the exhibition of the slides. It was unanimously voted to continue the club another year, and the matter of increasing the annual assessment was referred to a committee to consider and report. The old board of officers was re-elected. The board is William P. Atwood, President; Charles J. Glidden, Vice-President; H. W. Barnes, Treasurer; G. A. Nelson, Secretary. It was voted to add a by-law providing for an executive committee, consisting of the officers and three other members. Paul Butler, Charles H. Allen, and W. E. Badger were elected as members of the executive committee, which is to have general charge of the affairs of the club. Seven new members were elected at this meeting.

Burlington (Iowa) Camera and Sketch Club.—Under this name the amateurs of Burlington have recently organized with the following board of officers: President, W. O. Ransom; Vice-President, George H. Washburn; Secretary, A. Freeman; Corresponding Secretary, E. L. Parsons. Suitable quarters have been secured and will be fitted up in a manner to meet the needs of the members. The club is to be incorporated and ladies will be admitted to membership. The charter members number seventeen, and a rapid increase of membership is expected, as the social features of the club will be made much of. We wish the club all success.

Springfield Camera Club.—The third annual exhibition was held at Gill's Art Gallery, December 2d to 6th, inclusive. The exhibition catalogue shows two hundred and thirty-three entries. We hope to be able to give some account of the exhibition in our next issue.

The Amateur Photographic Society of Baltimore.—The regular meeting of the society was held at the rooms on Friday, the 21st instant, the President, Isaac T. Norris, in the chair, and present thirteen members. The proceedings of the last meeting were read and approved. The committee on lantern slides reported that they had made about one hundred, and expected to have fully thirty more within the course of about two weeks, and action could then be taken as to our next exhibition, as with 130 assured there would be no trouble to make the requisite number needed, viz., 150. The committee on "Illustrated Baltimore" reported that progress was being made and that they now had in hand a number of fine negatives, on which they would soon start to make slides.

Quite a long discussion was entered into regarding a series of lectures to take place during the winter, on subjects photographic, for the entertainment and improvement of our membership, and several very eminent persons were mentioned who would favor the society with lectures, among others Professors Rowland, Wilson and Smith, Dr. Onderdonk and Howard Jefferson, the later on photo-mechanical processes. These lectures, together with such slides as had been engaged, it was the sense of the meeting would fill the place of the slides of the Interchange, which it was decided to dispense with this season, owing to the fact that our society was not ready to hand in to the Interchange a sufficient number of slides, as also owing to the fact that from a monetary view it was not deemed advisable to join the Interchange this season.

The corresponding secretary reported that "Illustrated California" had been engaged for exhibition during April, and also reported that he was in receipt of the *Photographic Globe, Anthony's Photographic Bulletin, The Photographer, The Photographic Times, The Boston Photographic Review*, and the *Practical Photographer*, all of which were on the table for use of the members. Thanks were tendered Messrs. E. & H. T. Anthony for a number of samples of their new Hydrochinon, which was distributed among the members for a test. Attention was called by the president to our new dark-room, which, he stated, by the untiring efforts of Mr. James S. Cummins, was made equal, if not superior, to that of any other amateur dark-room in the country.

Entertainment in Honor of Miss C. W. Barnes.—Miss Barnes recently visited Syracuse, N. Y., and was entertained by the Camera Club there. The *Syracuse Journal* of November 21st, says: "Miss Catherine Weed Barnes, of Albany, who is the guest of Lawrence T. Jones, will be present at the rooms of the Camera Club this evening and give an exhibition of some of her work. Miss Barnes is one of the most accomplished women in amateur photography. There will also be a show of club lantern slides. To this entertainment the club members will be entitled to bring their wives and invite other ladies interested in photography."

Miss Barnes will speak before the Photographic Section of the Brooklyn Institute, December 9th, on the "Real and Ideal" in photography. She will show at the same time a number of her lantern slides.

INDEX RERUM PHOTOGRAPHIC.

By Dr. John H. Janeway, U. S. A.

[Continued from page 444.]

tive salts of silver upon glass. Since 1880 the general introduction of the gelatino-bromide of silver dry plates has taken place, and astronomical photography has advanced with enormous strides.

Solar—The first daguerreotype of the sun was obtained by two French scientists, April 2, 1845. During a total eclipse of the sun in 1851, two Germans obtained a faint impression of the corona or halo of light which we now know to surround the sun, but is only visible during a total eclipse. July 18, 1860, by photographs taken during an eclipse, the "red prominences" were determined to really belong to the sun's disk. Since that time no eclipse expedition is considered to be completely equipped without the camera and its adjuncts. The image of the sun projected by the telescope usually within the reach of the amateur is so small as to be of very little value, so that the minute account of the working will not be given.

Lunar—A telescope of 2 or 3½ inches is quite large enough for this work if the amateur is desirous to engage in it. Remove the eye piece and attach a light camera in its place. The operations of focusing and exposing are similar to other work. Rapid plates, with exposure of from one-half to one second, are required, owing to the combined movement of the earth and moon. Longer exposure will produce a blurring of the image.

Stellar—Ordinary telescopes are not suited for this work, because their lenses are so made and arranged as to bring especially the visual rays to a certain focus different from the actinic rays. So, for this work, second lenses are required and provided for the telescope. The great advantage of the sensitive plate over the eye in astronomical photography is that the impression produced upon it is cumulative. The eye sees no further into space after gazing ten minutes than it did in the first, but the effect of light upon the plate is ten times as great. Already stars which are invisible through any existing telescope have been obtained and placed.

AUTOGRAPHIC PROCESS—A gelatine plate which, for some reason or other, has become unfit for use for photographic purposes can be applied in a very useful manner to multiply drawings or printed matter. The surface of the plate is roughened with ossa sepia (cuttle-fish bone) so that one can write on the same, and drawings as well as printed matter can be applied to the plate. The gelatine film forms for this an excellent base. Lead pencil can be used direct or graphite can be applied with the aid of a stomp whenever large surfaces are necessary. Drawings and printed matter are produced as they will appear later in the print. When finished the plate is placed in the fixing bath, washed and dried. Another serviceable gelatine plate is placed in contact with this in a printing frame, exposed, developed, and fixed. From this negative autographic copies can be made from any photographic process, silver, iron, or platinum, and in any number.

AUTOTYPE PROCESS—A process by which photographs can be enlarged to the natural size by optical apparatus. The ordinary method consists in projecting the image of a negative plate by means of the lens of a megascope to sensitive paper, where it is fixed. M. Monckhoven improved on Woodward's apparatus, and Siebert improved still further on Monckhoven's.

AU DEUX CRAYONS A tinted picture. See "Quarter Century," page 469, for a durable process for procuring the tinted picture termed au deux crayons.

AUXILIARY EXPOSURE—Securing the right exposure in the camera has always been a puzzle even to the wisest and most astute photographers, and it continues to be so. The reasons have changed, however. With emulsion photography the danger is over-exposure, while "in the old wet days" the trouble was to secure enough, and then all sorts of dodges were resorted to to accelerate the exposure —exposure through red screens to diffused light, and to lamp light, etc. But most of all those old-time methods have been discarded. In 1886 or 1887 Eugene Himly patented a rather complicated apparatus to produce auxiliary illumination in reproducing prints on sensitive plates especially in dark winter weather. Some years ago an American suggested giving the silver paper a brief exposure to light, not sufficient to color it, before placing it in the printing frame, thereby accelerating the printing and securing a greater amount of detail in the higher lights. But further experiments showed that, while the image appeared in a shorter time, no further advantage was obtained, either in the period required to complete the printing or producing more detail.

AVOID, A FEW THINGS TO—Daylight for your dark-room lantern Artificial light is more constant and under control.

Ruby light for your lantern. Yellow or cathedral green is more pleasant, and enables you to see what you are doing.

Too pretty-looking negatives; generally they are under-exposed.

Changing from one developer to another; if a formula gives you good results, stick to it.

Trying experiments on negatives that cannot be repeated.

Doctoring negatives that can be taken over again.

Confusion in your formula, in your dark room, and, in fact, everywhere.

Using very small diaphragms when taking landscapes.

Excess of pyro or hydrochinon in subjects with strong contrasts.

Printing on albumenized paper when you can use platinum or bromide.

Economy in your developer ; have a sufficient quantity to cover well the plate.

An iron, stoneware or marble sink ; any negative, measure or bottle falling on it is sure to be broken.

Halation by using a suitable plate and developer.

Too much reliance on what others say; try for yourself.

Excitement when using a hand camera.

Processes in which bichromate is used when your hands are cut or chapped.

Shine in prints when, by having a matt surface, you can obtain more artistic results.

Retouching, but give all your attention to the lighting of your subject.

Under exposure ; no developer can get out of a plate what is not there ; whereas, over-exposure can be better remedied.

Keeping a large stock of rapid plates ; they don't keep, as a rule.

Soaking your plate in water before development; it has no advantage, and often causes pin holes.

And above all things, avoid being in a hurry.

AZALINE—Compound of two distinct substances, chinoline red and chinoline blue, a mixture of 1 to 10. It must not be confounded with azaleine, a coal tar color which is quite unlike the azaline used in orthochromatic photography. It derives its name from azalla, the color of which it suggests when diluted to some degree.

B

BACK FOCUS—Is determined by measuring the distance from the rear surface of a single lens to the ground glass of the camera when the image is sharply reflected on it, That distance is called the back focus of that lens, or its focal length.

BACKGROUND—Natural and artificial—Artificial are accessories that can be used and placed behind the person or object to be photographed. By many the background is considered of but little importance, but the thinking, successful worker will admit that atmosphere, delicacy, refinement, strength, vigor, elaboration, and balance of light and shade, are imparted by the backgrounds. Such being the case, it behooves one to be very careful in his selection of the proper background for his subject. Many an incongruous one is too frequently seen ruining what would otherwise have been an excellent and artistic picture. Backgrounds that are a picture of themselves should be but seldom used, and then only when they are intended to be distinctly subordinate to the subject in hand. A picture of a young and beautiful lady in a summer evening dress, with a mid-winter skating scene for a background, and that prominent, does not seem quite appropriate. Still I have seen it. The likeness, poise, lighting, and execution were excellent—but the effect! Backgrounds are of various shapes and of many kinds. Natural, artificial, exteriors, interiors, scenic, graded and plain. Of course the natural are the most pleasing, and the intelligent, painstaking photographer will try to obtain the most pleasing effects by the background furnished by naturė in the building up of his picture. The artificial are to be obtained in all kinds, shapes, and descriptions, at a moderate cost, from the dealers. But the amateur may with but little trouble and expense manufacture his own. All that is required is a frame 6 ft. high by 4 ft. 6 in. wide, made of inch stuff planed. It is well to have it fastened at the corners with wooden pegs, so that it can be taken to pieces if necessary. If desired, wooden or iron rods about 4 ft. long can be extended from the top corners at an angle of about 135°. These should be so arranged that they may slide easily if desired. Strong unbleached muslin makes a good background. It should be made wet and then stretched smoothly on the frame, tacked, and when dry should be painted with oil, which is more costly but more lasting, or with distemper made as follows:

Common whiting	1 lb.
Powdered glue	¼ lb.
Molasses	8 oz.
Water	½ gall.

Mix well together and add:

Ivory black	1 oz.
Ultramarine	½ oz.
Red ochre	¼ oz.

ground down in water to the consistency of cream. By the addition of the color it can be darkened or lightened. It is well to remember that when dry the color is lighter than when moist. Graded backgrounds are best made with pastilles. These pastilles can be made by working lampblack in moist moulding clay of different intensity of black, rolling out, and when dry rubbing them on the muslin as required. But the amateur can utilize many things for backgrounds—blankets, shawls, white paper, and, what is better, paper prepared for sheathing houses. It has an advantage in color, and costs but a trifle.

Backing Plates—Various plans have been suggested to prevent halation when photographing interiors, etc., by coating the backs of plates with some dark-colored or black substance, either applying it by brush or flowing collodion highly colored by some non-actinic dye, all of which are rather messy. Others propose using opaque paper or red rubber sheeting to the backs of the plate, but unless these are placed almost or altogether in optical contact, the trouble will not be prevented. As a rule, unless the halation is intense, the defect can be remedied after the plate is dry by the careful application of a piece of old linen or soft chamois wet with alcohol, and the place rubbed with a gentle but firm pressure. It is wonderful what an amount of careful rubbing the film will stand without injury. Any backing used must be removed before developing.

Balance—An apparatus for weighing bodies or substances. Every one who undertakes to photograph well should possess a reasonably good balance, not a delicate analytical balance turning with the hundredth of a grain, but a good common one that will turn readily with a quarter of a grain; one that will not stick, and the weights correct. Failures in these points have given rise to many vexatious and inexplicable failures in the various operations connected with photography.—Also a term used in composition denoting the proper relation of lines, lights and shadows necessary to secure harmonious and symmetrical pictures. Consult Burnet's "Essay," Wilson's "Philadelphia Photographer and Quarter Century," also H. P. Robinson's "Pictorial Effects in Photography."

Balloon Photography—Military authorities, especially in Europe, are paying considerable attention to this branch of photography. In Germany particularly successful views have been obtained from different elevations, from 200 to 2,500 meters, 656 2-12 feet to 8,202 feet. Enlargements from the negatives are made direct upon gelatino-bromide paper.

Barium—Ba = 137—Is a yellow metal as easily oxidized as sodium; decomposing water at the ordinary temperature.

Barium Chloride—$BaCl_2 + 2H_2O = 244$—Prepared by dissolving barium carbonate in hydrochloric acid, colorless crystals fairly soluble in water. This solution is a useful test for sulphuric acid or any soluble sulphate, giving a heavy white precipitate when these substances are present—barium sulphate. The precipitate is insoluble in all acids except hot sulphuric.

BARIUM NITRATE—Ba $(NO_3)_2$ = 261—Commonly known as the nitrate of baryta. Prepared by dissolving barium carbonate or sulphide in dilute nitric acid. The crystals are soluble in 12 parts of cold water or 3 parts of boiling water. Insoluble in alcohol or nitric acid. It has been recommended to add a small quantity of barium nitrate to the silver bath in the wet collodion process to prevent pin holes.

BATH—Any vessel used to contain a liquid while operating, also the solutions used in the various operations in photography. Preliminary recommended to be given plates before developing, to hasten development. A doubtful expedient, as it seems to increase the tendency to fog, if the developer is strong (normal) and freshly made. With an old developer the image shows itself in one half the time, but the seeming gain is lost before the operations are completed.

Bathing Plates with Ammonio-Erythrosin Silver.—Plates sensitized in ammonio-erythrosin silver show an extremely high general sensitiveness, and far greater orthochromatic qualities when the relation of yellow to blue sensitiveness is concerned. Erythrosin silver plates without silver in excess are as durable as ordinary erythrosin bathed plates. A great advantage is offered by this process in the possibility of employing a more concentrated colored solution without depressing the general sensitiveness of the plate. It is claimed that ammonio-erythrosin silver acts as a chemical sensitizer, and is also sensitive *per se*, and can therefore be added to the bath in large quantities. It may be prepared by subdued light or flame of a candle, as follows: Fifty c. c. of pure erythrosin solution 1 to 1000 water is heated in a water bath till a nitrate of silver solution 1 to 10 ceases to generate a precipitate. The deposit is collected on a filter and washed with distilled water till no reaction is shown with hydrochloric acid. The precipitate is then dissolved while still upon the filter in from 2 to 4 c. c. of ammonia mixed with 20 c. c. of distilled water. To bathe the plates place them in a preliminary bath of water with a few drops of ammonia for not longer than one minute, then plunge them in the above solution, it having been diluted with from 200 to 300 c. c. of distilled water for a few minutes. Dry in the dark, and they can be used the next day.

BELLOWS—That part of the camera between the front or lens board and the rigid body, which, by unfolding or folding up, enables the operator to extend from or draw in the lens toward the ground glass while focusing. They are made in two shapes, the conical or square. The former is the lighter of the two, but the square is the more use-

(To be Continued.)

BOOKS AND EXCHANGES.

SAIL AND PADDLE.—Many of our readers are, doubtless, lovers of the water; some of them may be canoeists. *Sail and Paddle* is a bright monthly magazine devoted to canoeing and cruising, and its monthly issues are always interesting reading, containing many wrinkles of value to the waterman. We have made arrangements by which we are enabled to offer this magazine and *Sail and Paddle* for the extremely low rate of $2.25. This offer will be withdrawn within three months and is good only for new subscribers.

America stands unrivalled the world over for the skill of its artists in designs for book illustrations and for its school of engravers. *Outing* has pressed the best of both into its service in enriching the pages of "A Far Countree," in its December number. The story alone is remarkable enough to mark a new departure in style; the illustrations enhance its intrinsic merits. As one of the Christmas books it will long be cherished as a memento of America's pre-eminence in both art and literature.

INTERIOR PHOTOGRAPHS.

From Allen Brothers, of Detroit, Michigan, we have received a number of large interior photographs, which were made with a No. 3 c. Wide-Angle Suter Lens. In two or three views we noticed remarkable cutting power, articles in the foreground, middle distance and distance being equally sharp. No data as to the rapidity of the lens is given, but that it has excellent definition is clearly shown in the photographs. We remember a few years ago, when the Suter lens was first exhibited, we believe at Cincinnati, quite an excitement arose over its remarkable powers, several being purchased by English visitors, as a curiosity That its success has been enduring, is shown by the large sale it has had.

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PUBLISHERS' DEPARTMENT.

[In justice both to ourselves, and to those firms whose specialties are mentioned in this department, we desire to state that we neither ask nor receive compensation for such notices as are given. Any dealer or manufacturer who sends us samples of goods for notice will receive just what the merits of the goods deserve, no more and no less. Any apparatus sent us for trial and notice will be returned if so requested. This department is maintained in the interests of our readers to whom timely notice of novelties may be valuable.]

Omega Paper.—We have recently made a number of prints on this chloro-bromide emulsion paper, manufactured by Bradfisch & Hopkins, and find it to work exceedingly well, giving good tones and not over-difficult of manipulation. In fact it is a remarkably simple process. The only fault we have against the paper is a slight tendency to heaviness in the shadows, but this is probably due as much to over-printing as to the paper itself.

The Blair "Compact" Camera.—There is a decided tendency among our home makers of cameras to imitate the English styles in the higher grades. The Blair Company manufacture a box on English lines with American modifications, which they rightly name the "Compact." We have used one of these boxes lately and find it very much to our taste. Light, rigid, and compact, it is the very box for the saunterer who wishes for something rather above the hand camera, but who does not wish to overburden himself. The turntable is one of the best we have seen, and the tripod, a three-fold variety, is what a tripod should be, portable, yet rigid. There may be better cameras made than the "Compact," but this is good enough for us.

The Allen & Rowell Company.—Mr. T. H. Blair, of the Blair Camera Company, has become the manager of the Allen & Rowell Company, and new and larger quarters have been fitted up at No. 485 Tremont Street. The well-known specialties of the company, ivory films, dry plates, and carbon paper, will be manufactured on a larger scale than heretofore, and a more aggressive policy will be adopted regarding their sale.

A. T. Thompson & Co.—Those of our readers who are contemplating the purchase of a lantern of any kind, from a cheap oil light to the expensive lime light stereopticon, will do well to write our advertisers, Messrs. A. T. Thompson & Co., for their catalogue before making a purchase. We have recently visited their factory and can say that their list embraces as full a line of goods of this class as any other house, and that the quality of their goods seems to be well sustained. The firm also carries a full line of slides.

Improvements in Darlot's Lenses.—There are few makes of photographic lenses which have maintained their popularity so long as the Darlot lenses. The constantly growing demand for a quick and compactly constructed lens for use in hand cameras has induced Darlot to remodel the smallest size (No. 1) of his well-known Rapid Hemispherical series, and he now supplies the market with this little giant in three different styles, all of which have the same diameter and focal length. We first have the regular sliding mount, its chief merit being to prevent the stop from dropping out or light entering the diaphragm slot. The second pattern has a plain barrel slotted to receive the stops, and the hood (which serves the purpose of shading and protecting the front lens) can quickly be unscrewed, rendering the instrument extremely light and compact. The third construction, perhaps the most popular, is provided with rotating stops, the largest of which is, of necessity, a trifle smaller than the normal aperture of the lens, which circumstance, on account of the slight loss of light at full opening, renders this style of the Rapid Hemispherical less desirable than the others for legitimate portraiture. The two larger sizes of this popular series are now also made with plain slotted barrel and detachable hood, an advantage appreciated by all amateurs. Darlot's single view lenses for landscape photography are supplied with rotating stops instead of the loose wafers of the old construction. An intermediate size has also been added to the Wide Angle Hemispherical series, viz., No. 2½, adapted to just make a 5 x 7 plate nicely.

In justice to so eminent and worthy an optician as Monsieur Darlot it is, perhaps, well to add that a large number of spurious Darlot lenses are being sold in many parts of the United States which, though marked like the genuine article, are inferior in working capabilities and not worth the price asked. The only authorized agents in this country are Messrs. Benjamin French & Co., of Boston.

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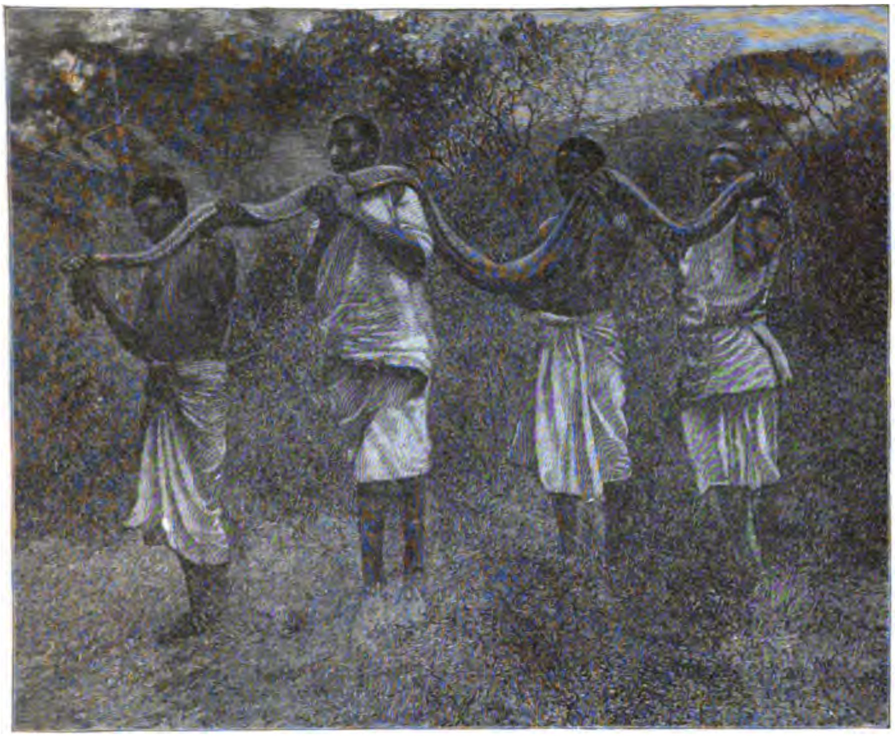

AFRICAN PYTHON PHOTOGRAPHED WITH HAWKEYE CAMERA NEAR THE USERI RIVER.

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Extract from "Africa as Seen by Thomas Stevens and the Hawkeye," in which Mr. Stevens describes, in the same happy and interesting vein which characterized his "Around the World on a Bicycle," the personnel and customs of an African expedition, a week's sport in the prolific game country adjoining the famous snow-capped mountain Kilimanjaro, with a valuable commentary on the latter, photographing a band of Masai warriors and other incidents of his trip. Fine engravings from negatives made in Interior Africa. Send 10c. in stamps for sample copy to THE BLAIR CAMERA COMPANY, Boston, Philadelphia, or Chicago.

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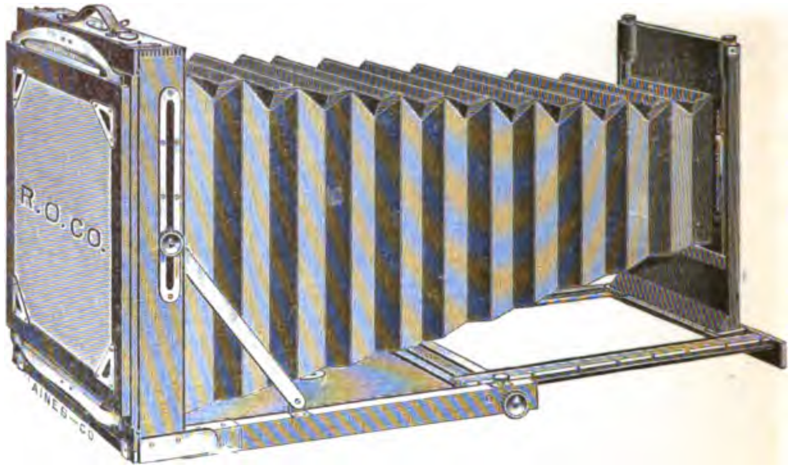

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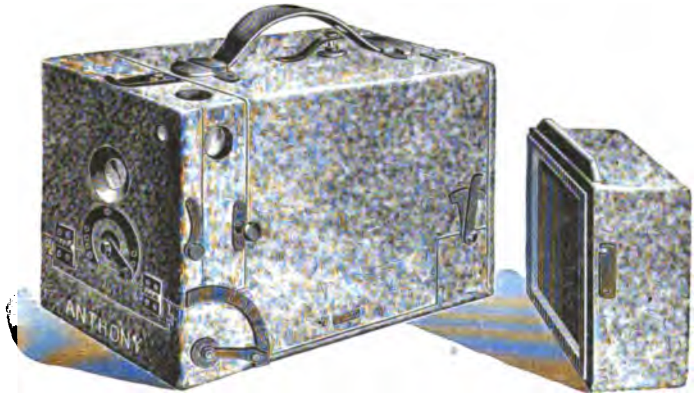

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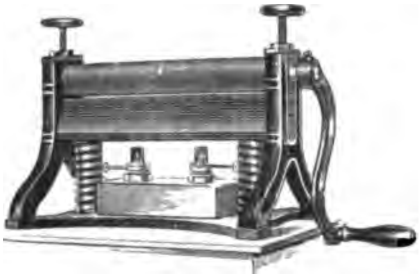

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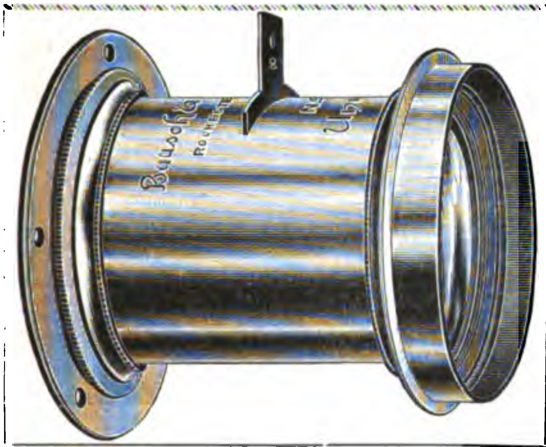

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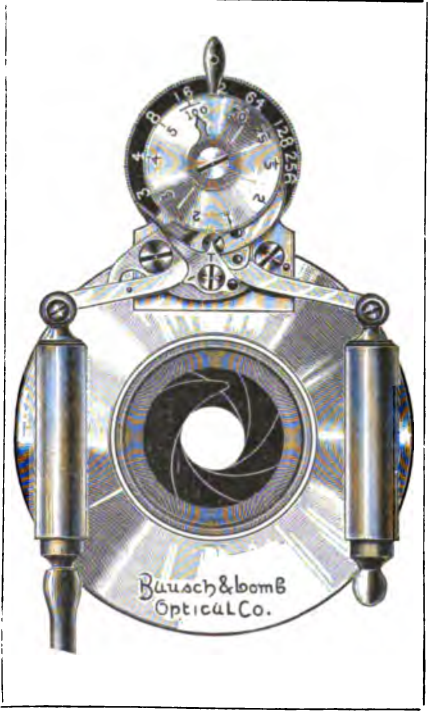

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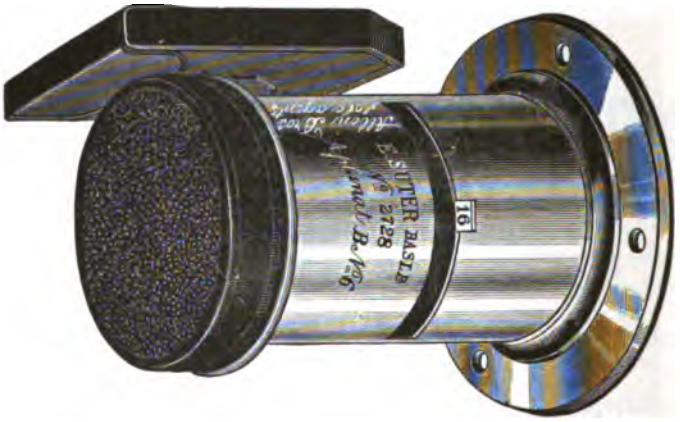

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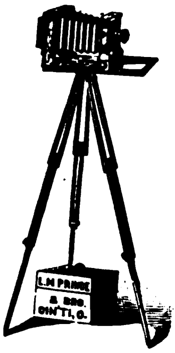

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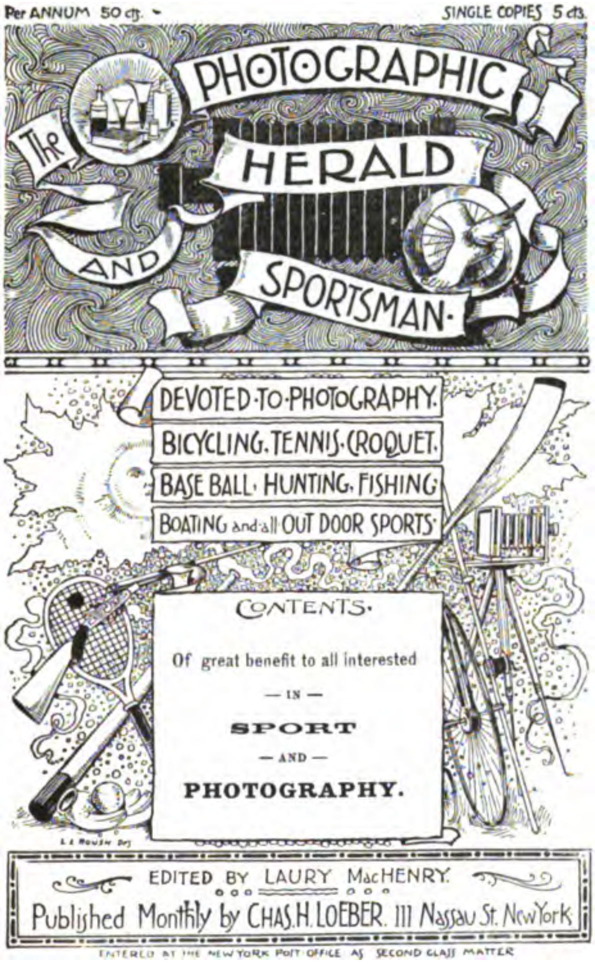

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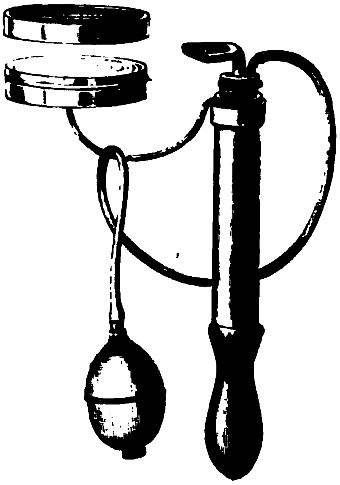

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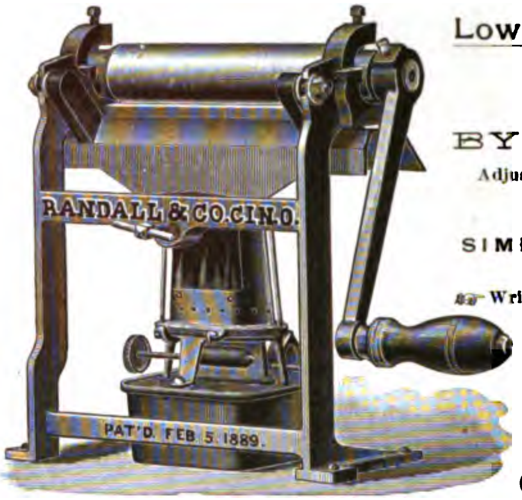
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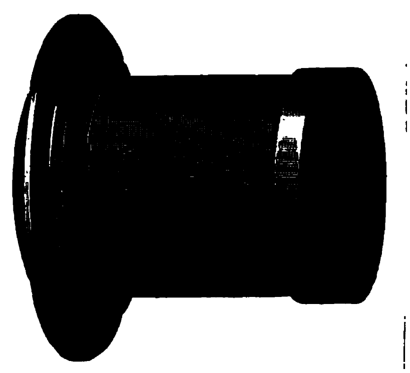

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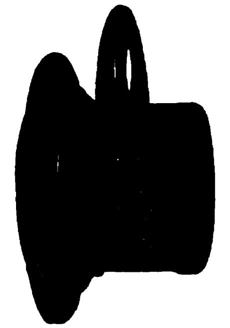

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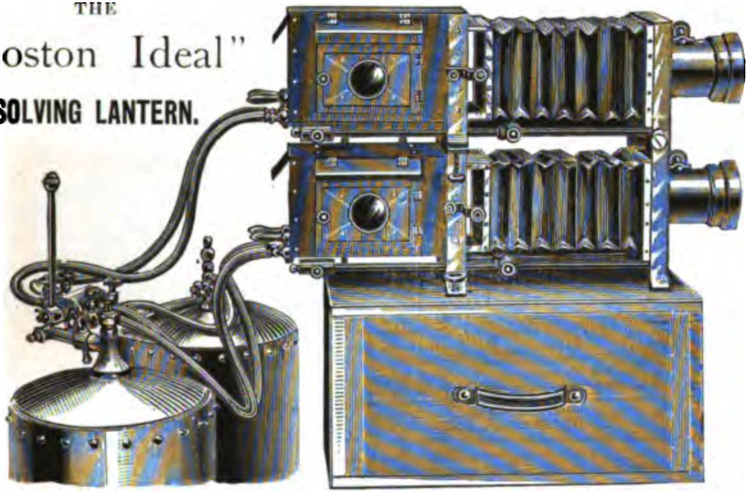

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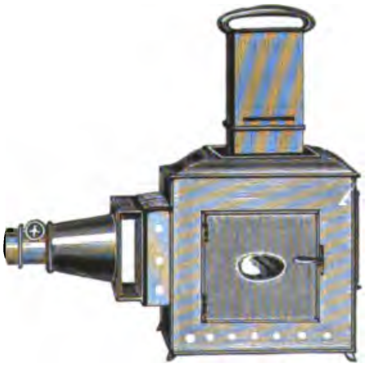

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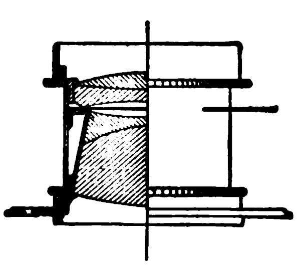

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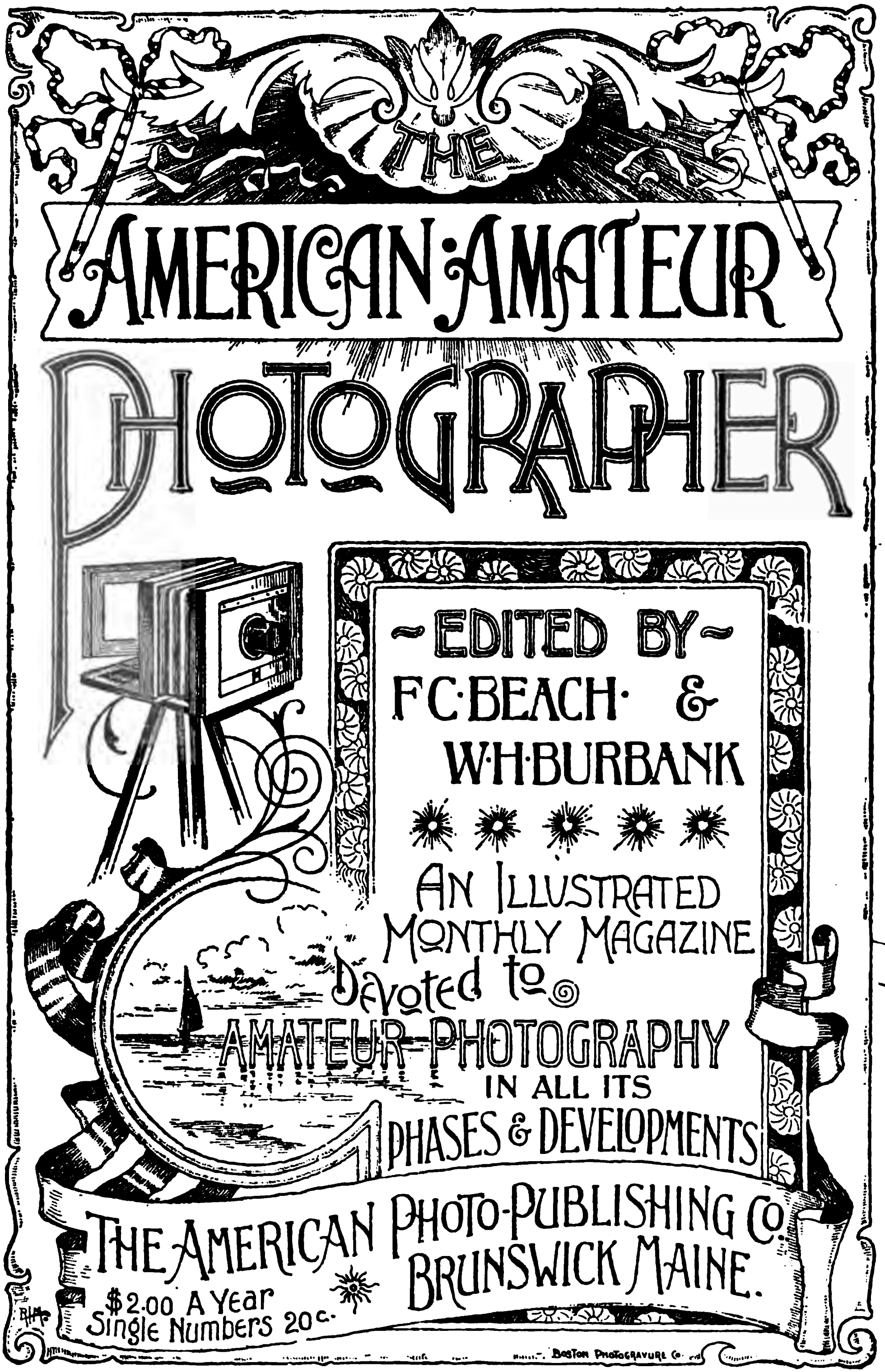

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